THE UNIVERSITY
of EDINBURGH

Participation in Out-of-School Activities and the Socio-Economic Gap in Children's Academic Outcomes

Volume I

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PhD

The University of Edinburgh

2014

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Declaration of Authorship

I declare that the work presented in this document is the original work of the author and that it has not been submitted for any other degree or professional qualification.

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29th December 2014

Acknowledgements

It is a great pleasure to thank the people who made this project possible.

First and foremost, I would like to thank my supervisors, Professor Lyn Tett and Professor Cristina Iannelli, without whom the writing of this thesis would not have been possible. Thank you for your helpful advice, suggestions, encouragement and enthusiasm throughout the PhD process.

During the PhD years, I have been extremely fortunate to receive financial support from a number of institutions. I wish to thank the College of Humanities and Social Sciences at the University of Edinburgh for the award of a research studentship, and the Scottish Funding Council for a Scottish Overseas Research Students Award Scheme (SORSAS) grant. Thank you for making such a generous contribution to this project.

My thanks also go to my family and my close friends for their unwavering support over the years. You are very special people.

Last, but most certainly not least, I would like to express my deepest appreciation to my husband, Yoni Satat, for his endless patience, encouragement, support, and strength. I love you. x

Abstract

Social stratification research has consistently found persistent inequalities in the academic outcomes of children from different socio-economic status (SES) groups. Research in the sociology of education has shown that students from higher SES groups outperform peers from lower SES groups on various academic indicators as well as make greater academic progress when assessed at two or more separate points in time.

Recent evidence from the US has also shown that participation in leisure out-of-school activities (OSA) is among the factors which may contribute to maintaining or even widening these inequalities. Similar evidence is lacking in the UK.

The present research focuses on this issue by analysing the role of participation in leisure OSA in the process of reproduction of social inequalities in academic outcomes among British school-aged children. The study draws on social and cultural capital theories to address the following questions: a) Are there differences in participation in OSA among school-aged children in dissimilar SES groups?; b) Taking into account children's SES, is participation in OSA associated with their academic–outcomes?; c) Does the association between participation in OSA and children's academic outcomes vary across different SES groups?

Using data from the third and fourth sweeps of the Millennium Cohort Study (MCS), when cohort members were aged 5 and 7 years old, the research explores participation in three categories of leisure activities; a) social-group activities, b) commercial-public activities, and c) home-centred

activities. Children's academic outcomes are assessed using verbal and non-verbal standardised tests, as well as by teachers' assessment.

The study applied regression models to examine the relationships between children's SES, participation in OSA and academic outcomes. The statistical analyses were carried out in a multilevel framework which enabled the MCS hierarchical data structure and area variations to be accounted for.

The findings suggest that participation in some, but not all leisure OSA is one of the factors which contributes to socio-economic inequalities in educational outcomes among British school-aged children. This is because participation in OSA is associated with better academic performance among all students, however those in high SES groups are more likely to be exposed to such activities. After controlling for SES, gender, family characteristics, school type, absenteeism and geographical variation, there is a small to moderate positive relationship between participation in a number of different leisure OSA and 7-year-olds' academic performance. Interestingly, variations among children from different SES groups were found in the extent to which attendance at certain OSA (e.g. after-school clubs) is associated with academic development between age 5 and 7: children from lower SES who attend such activities tend to progress more academically than children from intermediate and higher SES.

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List of Abbreviations (in alphabetical order):

- ALSPAC: Avon Longitudinal Study of Parents and Children (UK, 1991)
- AQMeN: Applied Quantitative Methods Network
- BCS70: British Cohort Study (UK, 1970)
- CLS: Centre for Longitudinal Studies
- CM: Cohort Member
- DATS: Devolved Administration Teacher Survey
- EPPSE: Effective Pre-School, Primary & Secondary Education (UK, 1996)
- FSP: Foundation Stage Profile
- GB: Great Britain
- GLLAM: Group for Large Local Authority Museums
- GPA: Grade Point Average
- GUS: Growing Up in Scotland (UK, 2005)
- HFRP: Harvard Family Research Project
- IMD: Index of Multiple Deprivation
- LEA: Local Education Authority
- LSYPE: Longitudinal Study of Young People in England
- MARS: The Massachusetts Afterschool Research Study
- MCS: Millennium Cohort Study (UK, 2000)
- NCDS: National Child Development Study (UK, 1958)
- NELS: National Education Longitudinal Study (US, 1988)
- NICHD: National Institute of Child Health and Human Development
- N.S.: Not Significant (in relation to a statistical result)
- NSSeC: National Statistics Socio-economic Classification
- NVQ: National Vocational Qualification
- OFSTED: Office for Standards in Education, Children's Services and Skills
- OSA: Out-of-School Activities
- PA: Physical Activity
- PISA : Programme for International Student Assessment
- PSU: Primary Sampling Units
- SES: Socio Economic Status
- SOSCN: Scottish Out-of-School Care Network
- TIMSS: Trends in International Mathematics and Science Study
- TPS: Taking Part Survey (UK, 2008/9)
- VPC : Variance Partitioning Coefficient

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Chapter 1 - General Introduction to the Thesis

1.1 Introduction

Social stratification research has consistently found persistent inequalities in the academic outcomes of children from different socio-economic status (SES) groups (e.g., Arum, Gamoran, & Shavit, 2007; Fischer et al., 1996; Gamoran, 1987; Geoffroy et al., 2010; Hills, Brewer, Stephen, & Ruth, 2010; Machin & Vignoles, 2005). Cross sectional research has shown that students from higher SES groups outperform peers from lower SES groups on various academic indicators (e.g., Goodman & Gregg, 2010; Hartas, 2012; Machin & Vignoles, 2005). Longitudinal studies have indicated that children in higher SES families also make greater academic progress than lower SES counterparts when assessed at two or more separate time points (e.g., Alexander, Entwisle & Olson, 2007; Downey, Voh-Hippel & Broh, 2004; Hansen & Jones, 2010).

In addition, research has demonstrated that the academic achievement gap in pre-schoolers and school-age children has long-term impacts on later life outcomes such as educational attainment, occupational status, income levels and health (e.g., Bynner & Joshi, 2002; Fiscella & Kitzman, 2009; Hills et al., 2010). Together, findings from these studies converge onto the conclusion that students with higher SES perform better academically compared to peers with lower SES, and are also more likely to have the benefit of greater well-being throughout their lives.

Recent evidence from the US has also shown that participation in out-of-school activities (OSA) is among the factors which may contribute to

maintaining or even to widening these inequalities. This body of research demonstrates that participation in OSA is positively associated with a range of academic outcomes, and that students from high-SES families are more likely to attend OSA than peers from low-SES families. So, while attendance at OSA has beneficial implications for the academic outcomes of all students, those in high-SES groups are more likely to be exposed to such activities and to benefit from them.

In the UK, there is little research into the links between SES (measured by parental education and occupation levels and by familial incomes), participation in OSA, and school-aged children's academic performance and academic development. Consequently, little is known as to whether attendance at such activities widens, narrows or simply maintains the academic achievement gap among British children from different SES groups. This is the case even though, in the past two decades, there has been great policy interest and targeted governmental investment in widening the participation in OSA of children aged from birth to 14 years.

The present study intends to address these gaps in research by exploring the links between school-age children's participation in OSA, SES, and academic outcomes.

1.2 Theoretical Framework

The conceptual framework that will be used to inform the research design and interpretation of the findings draws on the theories of cultural and social capital. These theories offer a plethora of potential, sometimes conflicting, explanations for the association between participation in OSA

and the academic performance of school-aged children who grow up in dissimilar SES groups. The theories will be used as follows:

Cultural Capital Theory

The theory of cultural capital will be used primarily to explain the associations between participation in OSA and SES. Two conflicting arguments as to the links between SES and participation in OSA will be examined: Bourdieu's (1984) homology hypothesis versus Peterson's (1992) "omnivore-univore" hypothesis. In addition, the idea that differing levels of engagement in OSA represent class-based childrearing practices will be explored by drawing on Lareau's (2003) distinction between the "concerted cultivation" and the "accomplishment of natural growth" strategies. The concept of concerted cultivation will also be used to explain the links between participation in OSA and children's academic outcomes.

Social Capital Theory

Social capital, a concept which refers to the value the interactions among people bring both to the individual and to the groups he or she belongs to, is thought to aid academic performance through various processes (Bourdieu, 1986; Coleman, 1988, 1994). The theory of social capital, therefore, will be used to explain how participation in OSA might benefit the academic performance of school-age children. In addition, the thesis will explore whether the accumulation of social capital via participation in OSA may lead to the reproduction of educational stratification, or to mobility towards more equality in the academic outcomes of children from dissimilar SES groups.

1.3 Research Questions

The present study intends to explore the role of participation in various OSA in the process of reproduction of social inequalities in academic performance among British school-aged children. It will focus on the following research questions:

a) Are there differences in participation in OSA among British school-age children in dissimilar SES groups?
b) Taking into account children's SES, is participation in OSA associated with their academic outcomes?
c) Does the association between participation in OSA and children's academic development vary across different SES groups?

The study will explore participation in three categories of OSA: a) social-group activities, b) commercial-public activities, and c) home-centred activities. Within each of the OSA categories, activities will be selected to broadly represent the highbrow-lowbrow cultural capital spectrum. Children's academic outcomes will be assessed using verbal and non-verbal standardised tests, as well as by a teacher's assessment.

1.4 Methodology

Data for the study will be drawn from the longitudinal "Millennium Cohort Study" (MCS), a survey of around 19,000 babies, all born during the first months of the new millennium in various locations across the UK. The working sample will be comprised of data from the third and fourth sweeps of the MCS, when the cohort children were aged around 5 and 7 respectively.

The study will apply both linear and logistic regression equations to model the relationships between children's SES, participation in OSA and academic performance and development. In addition, modelling will be fitted to examine whether there are interaction effects between participation in OSA and SES on children's academic development in the middle childhood years.

The statistical analyses will be carried out in a multilevel framework which makes it possible to account for the MCS hierarchical data structure as well as to estimate the degree to which variation in children's attendance at OSA is attributable to locality factors rather than to individual factors.

1.5 Chapter Outline of Thesis

The thesis will be organised in 3 parts.

In the first part of the thesis, Chapter 2 will introduce the theoretical framework that informs the research design and interpretation of the findings, familiarise the reader with the empirical evidence by which existing knowledge gaps are identified, and present the research questions that were formulated to address these gaps. Then, Chapter 3 will introduce the data that will be used in the present research and the methodological approach that the study adopts to analyse them.

In the second part of the thesis, the empirical findings will be presented and discussed. First, in Chapter 4, results from investigations of the links between SES and children's participation in the three OSA categories will be displayed and discussed. Then, Chapter 5 will report results from models in which the associations between participation in OSA and 7-year-olds'

academic performance and development were explored. The findings from the two empirical chapters will be situated within a theoretical framework.

The final part of the thesis will offer a general discussion of the findings alongside conclusions and policy implications. Also, the limitations of the present study will be discussed and directions for future research will be proposed.

PART 1 –

Theoretical Framework, Empirical Background and Methodology

Chapter 2 – The Theoretical Framework and Empirical Background of the Current Research

2.1 The Links between Academic Outcomes, Socio-Economic Status (SES), and Out-of-School Activities (OSA)

Social scientists and policy-makers have long been interested in understanding the ways and extent to which multiple socio-economic factors influence children's cognitive development and academic performance. This scholarly and professional interest has generated an impressive body of research into the role of the family (e.g., Dearing, Kreider, Simpkins, & Weiss, 2006; Gregg & Washbrook, 2011; Hall et al., 2010; Rasbash, Leckie, & Pillinger, 2010), the school (e.g., Bell, 2003; Conduit, Brookes, Bramley, & Fletcher, 1996; Dronkers & Robert, 2007; Rasbash et al., 2010), and the community (e.g., Bell, 2003; Clifton & Cook, 2012; Rasbash et al., 2010), in the formation and reproduction of inequality in the academic success of children from various population groups.

Much research into cognitive development and educational success has focused on the associations between a range of socio-economic status (SES) dimensions, including parental education and occupation levels and familial incomes, and students' performance by a variety of academic measures. Over the past decades, a substantial amount of research has emerged which demonstrates the persistence of socio-economic inequality, or "gap", universal across time and place, in the academic outcomes of individuals in different groups (e.g., Arum et al., 2007; Blanden, Gregg, & Macmillan, 2007; Bynner & Joshi, 2002; Fiscella & Kitzman, 2009; Fischer et al., 1996; Gamoran, 1987; Geoffroy et al., 2010; Gregg & Macmillan, 2010; Haveman & Wolfe, 1995; Hills et al., 2010; Machin & Vignoles, 2005;

Sammons et al., 2004; Van-De-Werfhorst, Sullivan, & Cheung, 2003). This body of research illustrates a consistent trend according to which school-age students who grow up with highly educated parents, with parents who hold high-status jobs or in a family with high incomes, do better academically than counterparts who live in lower SES families.

Following the research tradition mentioned in the above section, I have decided to focus in the present study on three key SES factors, namely, parental education, parental occupation and income levels. The next sections, therefore, present findings from UK-based research into the socio-economic gap in children's and adolescents' academic outcomes, concentrating on these three SES dimensions.

2.1.1 Parental Education and Children's Academic Outcomes

As has been noted earlier, one of the most frequently introduced SES dimensions in studies exploring the inequality in children's academic outcomes is parental education level. Educational SES is typically measured by the number of years of education the child's parents completed, or by the mother's and/or father's highest obtained educational qualifications. There is good UK-based evidence pointing to a gap in the academic success of children and adolescents in relation to the level of their educational SES. In particular, studies show that school-age students who live with highly qualified parents tend to outperform counterparts whose parents have lower qualifications, on a range of academic tasks and assessments.

For example, in England, Cullis and Hansen (2008) and Hansen and Jones (2010), who analysed data from the latest UK birth cohort study, the

millennium cohort study (MCS), found that 5-year-olds who grow up with poorly-qualified parents scored lower on standardised cognitive tests measuring both verbal and non-verbal skills than peers with better-qualified parents. These researchers found, in addition, that at the age of 5, children of parents with lower academic qualifications were assessed as less academically skilled by their teachers, compared to same-age counterparts with better qualified parents. These results remained significant when age 3 test scores were accounted for. Likewise, George, Stokes and Wilkinson (2012) showed that there is a statistically significant positive association between the MCS 7-year-olds' academic performance at key stage 1 teachers' assessment and their educational SES, accounting for the type of pre-school arrangement the children attended and other SES factors.

Goodman et al. (2009) presented similar results using data from the "Avon Longitudinal Study of Parents and Children" (ALSPAC) and the "Longitudinal Study of Young People in England" (LSYPE). Their analyses showed that, at both the primary and secondary school years, students with highly educated mothers outperformed peers with less well-educated mothers on a range of academic assessments. The researchers also found that the educational SES gap in students' academic performance increased slightly between ages 7 and 14, but not between ages 14 and 16. Sylva et al. (2012) showed, by analysing data from the "Effective Pre-school, Primary and Secondary Education" survey (EPPSE), that at key stage 3, students of highly educated mothers scored higher on math and English assessments than peers with mothers holding low educational qualifications.

In Scotland, researchers found a similar trend in pre-school and school-age children. Bromley (2009), who analysed the "Growing Up in

Scotland" (GUS) longitudinal study, found that, at age 34 months, Scottish pre-schoolers with highly qualified mothers obtained higher scores in various standardised cognitive tests than same-age children living with less well-educated mothers.

A more recent GUS analysis demonstrated that 5-year-olds living with poorly-qualified parents were at higher risk of experiencing cognitive difficulties than peers from families with better-qualified parents (Save the Children, 2012). In addition, GUS children living with highly educated parents, gained higher scores on a "school readiness" index, comprised of statements reflecting parental perception of their child's ability to cope with the primary school environment (Bradshaw et al., 2012).

The research reported thus far strongly indicates that, across the UK, the academic performance of pre-schoolers, students in the middle childhood years and adolescents, all differ by the level of parental education.

However, parental educational qualifications represent only one aspect of children's SES. A second key SES dimension frequently used in studies of the academic achievement gap among children relates to parental occupational characteristics. The current study will also consider the importance of occupational SES in children's experiences.

2.1.2 Occupational SES and Children's Academic Outcomes

Occupational SES, or social class, is typically measured by grouping people into ordered categories according to their job characteristics. The type of job characteristics usually considered are: the type of work carried out; whether the job involves the supervision of others; the size of organisation in

which a person works, and other indicators. In the absence of these data, occupational SES can be roughly assessed by differentiating working individuals from those who are not in paid work.

Similarly to research on the links between parental education and children's educational achievement, studies from the UK show that the academic performance of children and adolescents varies with their parents' occupational SES. For example, Bromley (2009) showed that Scottish pre-schoolers in the GUS survey scored higher on both verbal and non-verbal standardised tests if they were brought up by two employed parents, each working 16 hours or more a week, than children living in a household with a different employment profile.

In England, Feinstein (2003), who analysed data from the 1970s British Cohort Study (BCS70), found that 22-month-old toddlers of parents with low occupational SES were outperformed in a variety of cognitive tests by peers belonging to families of higher occupational SES. Moreover, Feinstein found in this study that the mean score of children of parents with low occupational SES dropped over the school years so that, over time, some children from low occupational SES background, who were initially within the higher range of the scores distribution, were outperformed by peers of parents with higher occupational SES.

It should be noted, however, that this final finding from Feinstein's 2003 research has been criticised by Jerrim and Vignoles (2011), who argued that a methodological fallacy led to overestimation of the decline in low-SES high-achieving students' scores. In particular, Jerrim and Vignoles argued that Feinstein's analysis fails to account for a phenomenon known as regression towards the mean (RTM). RTM can produce biased results and

lead to mistaken inferences in studies of cognitive development in which repeated measures on the same individuals are undertaken. This occurs for various reasons, including the practice of dividing participants into ability groups based on their performance in a single test, or the use of non-comparable tests at different time points. Using data from the ALSPAC and MCS, Jerrim and Vignoles's 2011 study demonstrated that, once RTM is taken into account, there is little evidence of decline in the academic skills of low-SES students who are in the high-achievers group.

Goodman et al. (2009) showed, using data from the MCS, that after controlling for a range of background factors, occupational SES is positively linked to English students' performance at age 5, as measured by standardised tests as well as by the teacher's assessment. A similar result in regard to the association between occupational SES and the MCS children's foundation stage profile (FSP) scores is demonstrated in research by Hansen and Jones (2010), in which different control variables were used. In addition, Hobcraft and Kiernan (2010) showed that lower scores of 5-year-olds in the MCS are associated with persistent unemployment of the parents.

Results indicating a gap in the academic outcomes of children by their parents' occupational social class are also presented in a report by Hills et al. (2010), who showed that adolescents in upper and middle social classes perform better at school than their working-class counterparts. Furthermore, by comparing findings from the analysis of the BCS70, MCS, ALSPAC and LSYPE, Hills et al. (2010) showed that the academic achievement gap between students of parents with high and low occupational SES tends to widen over time.

In addition, Sylva et al. (2012), who analysed data from the EPPSE found that at key stage 2, and even more so at key stage 3, students in high occupational SES families scored better in math and English than peers living with parents who held lower status jobs.

Similarly, Van-de-Werfhorst, Sullivan and Cheung (2003), using data from the "National Child Development Study " (NCDS), showed that parental social class is positively linked to age 11 reading and math scores, and age 16 "General Certificate of Education" O-levels. Sullivan, Heath and Rothon (2011), who analysed data from the "Youth Cohort Study of England and Wales" (YCS) found that students with high occupational status did better in their GCSE than counterparts with lower occupational status. Moreover, the researchers showed that this class-based disparity is greater at the higher levels of GCSE attainment: that is, that variation in the percentage of students from the two class groups was smaller for obtaining 1 good pass than for obtaining 5 or more good passes.

Overall, the findings presented thus far suggest that both educational and occupational SES are positively associated with the academic outcomes of children and adolescents in the UK.

2.1.3 Familial Income and Children's Academic Outcomes

An additional SES dimension commonly used by researchers exploring the academic gap among students growing up in dissimilar circumstances relates to familial income. Often, this SES aspect is measured by the family's monetary income from the parents' paid jobs. In other cases, indicators such as housing tenure, possession of material goods, or eligibility

for free school meals are used as proxy measures of income or as an indication of the family's position on the wealth-poverty continuum.

In keeping with the two SES dimensions earlier reviewed in this thesis, i.e., parental education level and occupational status, the evidence is strong that growing up in economic hardship has detrimental impacts on cognitive development and academic success.

Hansen and Jones (2010), in this connection, found that, in the MCS, 5-year-olds living in households with higher incomes scored better on the teachers' FSP assessment than counterparts living in less well-off families, controlling for a range of socio-economic characteristics and the type of childcare the cohort members attended. In addition, there was a positive association between the family's income and the children's BAS aggregated test scores. This test combined three subscales of the BAS: the naming vocabulary, picture similarities and pattern construction.

George et al. (2012) showed that children who were exposed to poverty, that is, who lived in households with income below 60 per cent of the national median, scored lower on the MCS verbal test at age 3 and at age 7, as well as in the teacher's assessment at age 7, compared to peers with no similar experience of poverty. Likewise, Kiernan and Mensah (2009), in an additional MCS analysis, found that children brought up in an environment of persistent poverty were more likely to exhibit learning delay than children who were not raised in poverty. Schoon et al. (2012) further showed that, on entry to primary school, cohort members who experienced ongoing poverty scored between 5 and 7 points lower on a verbal standardised test.

Analyses of other national UK surveys provide further evidence that there is a link between income and academic performance. Goodman et al.

(2010), for instance, found positive associations between incomes and students' academic performance by a variety of measures in the ALSPAC (administered at age 7 and 11) and the LSYPE (administered at age 11, 14 and 16) surveys. Sylva et al. (2012) found that 14-year-olds who were eligible for free school meals, an indicator of poverty, scored lower on a "maths academic self-concept" scale in the EPPSE. Sylva and her colleagues also showed that at key stage 3, recipients of free school meals obtained lower math and English scores when assessed by their teachers than counterparts who were not eligible for free school meals. Similarly, Hills et al. (2010) reported on several UK-based studies, all showing that in England and Wales, 16-year-olds who were not receiving free school meals achieved substantially better results in their GCSEs than same-age students who received free school meals.

Findings from the GUS survey in Scotland are consistent with results from England and Wales. As Bromley (2009) has shown, Scottish children aged 34 months obtained lower scores in standardised early years cognitive tests if they were brought up in homes with low incomes. In addition, at entry to primary school, GUS 5-year-olds living in poorer homes were at higher risk of experiencing cognitive difficulties than same-age children from better-off families (Save the Children, 2012). A further GUS analysis conducted by Bradshaw et al. (2012) showed that at the age of 5, children in families with low incomes, compared to peers in families with higher incomes, were perceived by their parents as less able to cope with the primary school environment.

Findings from the studies reported here, thus, illustrate a consistent trend according to which, in the UK, children in groups characterised by

high SES, as measured by parental education, parental occupation levels and familial incomes, demonstrate better performance in cognitive tests and educational assessments than children in groups with lower SES. The mechanisms that link SES and children's educational success, however, are still imperfectly understood.

To explain this connection, researchers have raised the possibility that, at least to some extent, the link between SES and academic performance students is mediated by participation in out-of-school activities (OSA) (e.g., Feinstein, Bynner, & Duckworth, 2006; Fredricks & Eccles, 2006; Henderson, 2013; Huang, Gribbons, Sung-Kim, Lee, & Baker, 2000; Muschamp, Bullock, Ridge, & Wikeley, 2009; Posner & Vandell, 1994; Springer & Diffily, 2012).

In what follows, therefore, I briefly introduce findings from studies into the links between SES, academic outcomes, and school-age students' attendance at OSA.

2.1.4 Participation in Out-of-School Activities (OSA), SES and Children's Academic Outcomes

A large body of US research shows positive associations between school-age students' academic outcomes and participation in programmes operating after the regular school day, offering academic support, sports, arts and other enrichment and recreation activities. For instance, researchers found positive associations between attendance at various types of OSA and students' efforts to succeed in class (James-Burdumy et al., 2005), aspirations to proceed to tertiary education (Huang et al., 2007), reading and math scores (Covay & Carbonaro, 2010; Vandell, Reisner, & Pierce, 2007), and grade point averages (GPA) (Springer & Diffily, 2012). This body of research strongly

indicates that participation in OSA benefits the academic outcomes of school-age students.

However, there is also ample US research demonstrating that participation in OSA and SES are inextricably linked. Studies show that students are more likely to attend OSA if they are living in well-off families, with highly educated parents, or with parents who hold high-status jobs (Covay & Carbonaro, 2010; Earle, 2009; Eccles & Appleton-Gootman, 2002; James-Burdumy et al., 2005; Lareau & Weininger, 2008; Miller, 2010; Vandell & Shumow, 1999).

A small range of research from the UK demonstrates a similar trend, indicating that children and adolescents in high-SES groups are exposed to OSA in greater numbers than counterparts from low-SES families (e.g., Feinstein et al., 2006; Ferragina, Tomlinson, & Walker, 2013; Henderson, 2013; Wikeley, Bullock, Muschamp, & Ridge, 2007). UK-based research also demonstrates that parents with high SES place great importance on their children's attendance at organised OSA (Crozier et al., 2008; Vincent & Ball, 2007; Vincent, Rollock, Ball, & Gillborn, 2013).

Together, these findings indicate that attendance at OSA may bring children academic returns which are independent of the effects of SES, family characteristics, and other measures. Moreover, the findings suggest that, at least in part, the association between SES and students' academic performance is mediated by participation in OSA. Participation in OSA, therefore, may be one of the bases of stratification in the academic achievement of school-age children with dissimilar SES.

In this context, Downey, Hippel and Beckett (2004), who explored the question of whether US schools widen, narrow or maintain the

educational gap among pupils in different SES groups, found that this gap grew during the school summer holiday, but not during the school year. In their research, Downey et al. extracted data from a nationally representative large-scale survey of children who, between the final year of kindergarten and the end of the first school year, were tested several times at fixed intervals. Downey et al. examined the extent to which children progressed in math and reading at three consecutive periods: the final year of kindergarten, the summer holiday and the first year of elementary school. The results showed that, on entry to elementary school, a gap in the academic performance of students in dissimilar SES groups, as measured by a composite index combining parental education, occupation and income, already existed. This SES gap slightly decreased during the first school year and increased during the summertime. Based on these findings, Downey et al. argued that differences in the out-of-school environment of children in high- and low-SES families contribute to the emergence of early-years academic achievement gap, whereas schools narrow or at least maintain this gap.

In the same context, Alexander, Entwisle and Olson (2007) explored the growth of inequality in the academic performance of students in different SES groups during the school year. In this study, the researchers conducted seasonal comparisons using data from a representative sample of 1st-graders in several Baltimore public schools who were surveyed longitudinally throughout the elementary and high-school years and into their young adulthood. Alexander et al. found, firstly, that at the elementary school period, children from families with high SES outperformed peers in low SES families in reading and math standardised tests. Secondly, the researchers

showed that, while there were no differences in the winter gain scores of students in high and low SES groups, meaning that the two groups progressed equally in their learning during this period, the summer gain scores were greater for students in high-SES families compared to counterparts in low-SES families. Alexander et al. explained that, while during the school year the achievement gap between pupils in the high and low SES groups remained relatively stable, during the summer holiday it increased. Alexander and his colleagues found, in addition, that the elementary school "summer gain" disparity explained some of the SES variation in the sampled students' high-school scores, as well as their likelihood of dropping out of school and likelihood of enrolling in tertiary education. Based on these findings, the researchers argued that disparity in the out-of-school environments of children in low- and high-SES groups, including the OSA they attend, have a greater impact on pupils' academic performance than differences across schools.

Building on the evidence provided thus far in the thesis, I argue that participation in OSA, during the summer holiday as well as in term time, could contribute to the formation and reproduction of the gap in academic performance of school-age children growing up in families with dissimilar SES. This is because, although participation in various types of OSA may have positive implications for students' academic outcomes irrespective of their SES, those in low-SES groups are less likely to attend such activities compared to counterparts in higher-SES groups.

But, while a good deal of research from the US shows that participation in OSA is one of the factors contributing to educational stratification in children and adolescents, there is limited UK-based research

into school-age children's attendance at OSA. Consequently, little is known about the degree of the SES disparity in British children's participation in leisure OSA and about the implications of participation in such activities for their academic outcomes.

In this connection, Gleave (2009), who summarised 40 reports on children's OSA, observed that "there is a lack of available data in the UK examining children's use of time and space in the UK…" (p. 2). Similarly, Gorard et al. (2012) recently suggested that "work in this area could be slowly built up, working towards a series of possible trials. The area is still in development stage…" (p. 77).

In the present research, I intend to address this gap in knowledge by exploring the associations between participation in various types of OSA and the academic outcomes of children in dissimilar SES groups in Britain. In addition, I will offer a theoretically informed discussion of the social stratification in participation in OSA and why such participation may be linked to improved academic performance and greater academic progress in school-age children. Finally, I will draw some policy implications based on the obtained results.

2.1.5 Summary

The review in the preceding sections shows that, in the UK, school-age students who live with well-educated parents, belong to high social classes or grow up in families with high incomes, obtain better scores on a range of academic tests and assessments compared to counterparts in lower-SES groups.

The existence of a gap in the academic outcomes of school-age students in high- and low-SES groups is important because it is linked to later life outputs. UK studies found, for example, that better academic performance at the pre-school period and during the school years is linked to higher educational qualifications (Bynner & Joshi, 2002; Feinstein & Duckworth, 2006), better labour market outcomes (Feinstein & Bynner, 2004), higher income levels (Blanden et al., 2007; Feinstein & Bynner, 2004; Feinstein & Duckworth, 2006), improved health indicators (Feinstein & Bynner, 2004; Fiscella & Kitzman, 2009) and lower rates of teen-pregnancy, smoking and criminal activity (Feinstein & Bynner, 2004). As Hansen and Joshi (2008) observed:

> Children growing up in disadvantaged circumstances are at greater risk of developing cognitive and behavioural adjustment problems during childhood, which in turn influences later outcomes regarding education, employment, health and social integration (p. 4).

A considerable amount of evidence from the US indicates that participation in various OSA is linked to better academic outputs in school-age students. However, research also shows that students in high-SES groups are more likely to attend OSA than peers from low-SES families. Disparities in the out-of-school experiences of children, therefore, may contribute to the academic achievement gap of students from dissimilar SES groups.

In the UK, there are few studies into the links between participation in OSA, SES, and the level of school-age children's academic outcomes. Consequently, relatively little is known as to whether participation in OSA

widens, narrows or maintains the academic achievement gap among British school-age children from different SES groups.

In the present study, I intend to conduct a rigorous empirical exploration of the links between SES, participation in OSA, and children's academic outcomes. In so doing, I shall shed light on how participation in OSA may be linked to educational stratification in the UK.

2.2 Theoretical Framework – Introduction

Various theories can be used to explain the links between participation in OSA and the stratification in educational outcomes by children's SES.

In the present study, I seek to understand why participation in certain OSA benefits the academic performance of children in dissimilar SES groups and whether the academic returns on participation in OSA differ by children's SES.

For this purpose, the theories of cultural and social capital offer a suitable conceptual framework. While these two theories by no means constitute an exhaustive list, they are deemed insightful in the context of the present study because they put forward ideas through which the links between participation in leisure OSA, SES and academic outcomes can be interpreted. In what follows, therefore, these theories are outlined and critically appraised, and their relevance for the present study is discussed.

2.3 Cultural Capital Theory

2.3.1 Cultural Capital and the Reproduction of Academic Inequalities among Students with Dissimilar SES

Social scientists have long been interested in understanding and ascertaining the mechanisms by which the children of higher-SES parents achieve greater academic success than those of lower-SES parents. Bourdieu's theory of cultural capital addresses this question.

The core argument in Bourdieu's theory of cultural capital is that, above and beyond economic factors and social ties, differences in the cultural practices and tastes of members in high- and low-SES groups contribute to the continuation of socio-economic stratification in education and in other fields (Bourdieu & Passeron, 1990; Bourdieu, 1984, 1986). Essentially, therefore, Bourdieu's theory of cultural capital is a theory of social reproduction.

The theory argues that the cycle of disadvantage starts early in life through class-based socialisation processes that equip children in high-SES groups with cultural practices that are praised at school and result in academic success. At the same time, children who grow up in low-SES families fall behind academically because they are less familiar with the cultural practices valued by the school.

Since these ideas have been put forward, considerable research into inequality in the academic performance of students from dissimilar SES groups has emerged which is influenced by, or tests the validity of, the theory of cultural capital (e.g., Aschaffenburg & Maas, 1997; Becker, 2010; Bodovski & Farkas, 2008; Carter, 2003; DiMaggio & Mohr, 1985; Dumais,

2002, 2006; Jaeger, 2009, 2011; Kaufman & Gabler, 2004; Lareau, 1987; Leopold & Shavit, 2011; Scherger & Savage, 2010; Sullivan, 2003; Zimdars, Sullivan, & Heath, 2009). In addition, researchers built upon Bourdieu's conceptual frameworks to develop more refined theoretical and empirical tools (i.e., DiMaggio, 1982; Lareau, 2003; Peterson, 1992).

The following sections discuss the different interpretations of the theory of cultural capital, give empirical evidence from studies investigating the links between SES, cultural capital and academic performance, and explain how this theory informs the present study.

2.3.2 Bourdieu's Cultural Capital Theory

Bourdieu's theory of cultural capital offers an explanation for the intergenerational transmission of advantages such as academic success by members of the dominant class. Bourdieu provides a multidimensional definition of cultural capital:

> Cultural capital can exist in three forms: in the embodied state, i.e., in the form of long-lasting dispositions of the mind and body; in the objectified state, in the form of cultural goods (pictures, books, dictionaries, instruments, machines, etc.), which are the trace or realization of theories or critiques of these theories, problematics, etc.; and in the institutionalized state, a form of objectification which must be set apart because, as will be seen in the case of educational qualifications, it confers entirely original properties on the cultural capital which it is presumed to guarantee (1986, p. 47).

This definition suggests that cultural capital is a personal asset that has both external and internal manifestations. It involves ownership of artefacts, participation in cultural activities and accumulation of educational credentials (the "objectified" and "institutionalized" states). But it also relates to the way culture is understood by the individual – that is, a person's familiarity with, and attitudes towards particular objects and activities (the "embodied" state). Together, these various manifestations of cultural capital help people from the dominant class to perpetuate their group's advantages as well as to transfer power to their offspring.

Cultural capital, however, does not hold any inherent value in society. Rather, cultural capital gains power through a process Bourdieu termed "symbolic violence" (Bourdieu & Passeron, 1990, p. 4; Bourdieu, 1989, p. 21). Symbolic violence is embedded in the every-day social habits of individuals from all strata. These practices contain the use of classification systems which ultimately distinguish the dominators from the dominated (Bourdieu & Passeron, 1990).

Bourdieu (1984) argued that cultural capital starts to accumulate as soon as a newborn arrives in the world, initially via interactions with his or her caretakers. The process of cultural capital formation continues throughout the childhood years, mainly (but not exclusively) through experiences within the family (Bourdieu & Passeron, 1990, pp. 30–31; Bourdieu, 1986).

Alongside the development of cultural capital, Bourdieu explained, a habitus is formed: an intrinsic multifaceted structure comprised of a repertoire of values, beliefs and actions, as well as cultural tastes and

appreciation of particular cultural domains and genres (Bourdieu, 1986, 1989).

However, due to the dissimilar upbringing practices and home environments children in various social-class groups experience, their cultural capital and habitus develop differently. While children in the upper social classes accumulate large stocks of cultural capital and develop a habitus that conforms to the dominant culture, counterparts in lower-class groups lack similar amounts of cultural capital and habitus traits (Bourdieu, 1984; Bourdieu & Passeron, 1990). The results of the dissimilar socialisation children in various socio-economic groups undergo, therefore, are the emergence of a class-based habitus accompanied by a particular level of cultural capital.

Later, when children from dissimilar class groups enter the school system, their differing levels of cultural capital reward them with different levels of academic success. This is because, within the education system, students are expected to conform to the behavioural codes of the dominant class:

> The educational institution succeeds in imposing cultural practices that it does not teach and does not even explicitly demand, but which belong to the attributes attached by status to the position it assigns, the qualifications it awards and the social positions to which it later gives access (Bourdieu, 1984, p. 26).

In this connection, Bernstein (1971, 1973), who studied issues surrounding pedagogic class reproduction, argued that, while students with a working-class background tend to make use of a "restricted" language

code to communicate their ideas at school, middle-class counterparts frequently exhibit an "elaborated" language code. And, because the "elaborated" code is the more valued and rewarded form of communication in the school setting, the academic outcomes of working-class students suffer compared to those of their upper- and middle-class peers.

This implies that academic success is not a mere outcome of personal talents or efforts, but hinge upon students' ability to selectively and effectively display their cultural capital in the school environment. But, while high-SES students are equipped with a repertoire of responses that is likely to reward them with educational success, for students in lower-SES groups who have internalised a different set of cultural practices, the display of equally appreciated behaviours is much harder. As a result, a gap in the academic performance of students in high-and low-SES groups quickly emerges (Bernstein, 1971, 1973; Bourdieu & Passeron, 1990; Collins, 2000).

As Lamont and Lareau (1988) explained:

> The well-known argument goes as follows: schools are not socially neutral institutions but reflect the experiences of the "dominant class". Children from this class enter school with key social and cultural cues, while working class and lower class students must acquire the knowledge and skills to negotiate their educational experience after they enter school. Although they can acquire the social, linguistic, and cultural competencies which characterize the upper-middle and middle-class, they can never achieve the natural familiarity of those born to these classes and are academically penalized on this basis (p. 155).

Reay (2006) in this regard found that English teachers tend to perceive working-class students' cultural background as inferior. The teachers in Reay's study expressed a belief that the working-class students' general knowledge failed to meet the schools' standards. She argued that a "mismatch" in cultural practices between teachers and students led working-class pupils to adopt a negative view of themselves, to exhibit only slight motivation to develop positive attitudes towards the school, and to show minimal desire to fit in (Reay, 2006). This argument is echoed in a report by Hirsch (2007), who reviewed studies on the implications of economic hardship for educational outcomes, and stated that the negative attitudes presented by students living in poverty "…were not based on children feeling that education does not matter, but rather on lack of confidence in their own ability to thrive within the system" (p. 5).

Bourdieu's writings, however, attracted vast criticism. Reay (1998, 2004a), for example, criticised Bourdieu's work for focusing on the individual's habitus and overlooking the impact of institutional habitus on the academic outcomes of students from dissimilar SES groups. She argued that differences across educational establishments may contribute to the reproduction of academic success of students from dissimilar SES groups, regardless of disparities in their personal habitus. This is because institutions vary in the level to which they encourage students' engagement in learning and the degree to which they stimulate educational aspirations among their students.

Jaeger (2009) stressed that for cultural capital to affect academic achievement, as suggested by Bourdieu, several processes must occur: firstly, parents must possess cultural capital, then, they must transmit this cultural

capital to their children, and finally, the children must convert it into educational success. This means, for example, that intergenerational transmission of cultural capital from parents to children in high-SES families may not bring academic returns, as implied by Bourdieu's core argument.

DiMaggio (1982) critically argued that, while Bourdieu's work emphasises the role of cultural capital in the reproduction of academic stratification by students' SES, cultural capital can in fact narrow this gap. He offered a perspective according to which the acquisition and display of cultural capital may be utilised by low-SES individuals as a tool for upward mobility.

DiMaggio (1982) asserted that, for Bourdieu's cultural reproduction to be empirically affirmed, two conditions must be satisfied. Firstly, a positive association between cultural capital and academic performance must be found. Secondly, the positive effect of cultural capital on academic performance must be greater for students in high-SES families than for counterparts in low-SES families. Moreover, there should be a positive link between parents' and children's volume of cultural capital, that is, an indication of intergenerational transmission. By contrast, for a cultural mobility model to be supported, the academic returns to cultural capital must be larger for low-SES students than for high-SES students.

Several scholars pointed out that, in large part, Bourdieu's theory and concepts suffer from considerable vagueness (Dumais, 2002; Lamont & Lareau, 1988; Sullivan, 2002). Indeed, the lack of clear definition is evident from the multiple indicators researchers have used to measure cultural capital. These range from indicators on ownership of objects, through cultural tastes to cultural knowledge. In addition, De-Graaf, De-Graaf and

Kraaykamp (2000) stressed that the process of intergenerational transmission of cultural capital is not clearly defined.

Lareau and Weininger (2004) argued that Bourdieu's work placed relatively little emphasis on the process of children's schooling and its role in the formation and reproduction of socio-economic inequality of educational outcomes. Lareau and Weininger also criticised several Bourdieu-inspired studies on the grounds that the interpretation of cultural capital as participation in, and consumption of, highbrow and mid-brow cultural forms is of limited explanatory power.

Lamont and Lareau (1988), in response to the conceptual and empirical difficulties they identified within Bourdieu's theory, defined cultural capital as:

> …institutionalized, i.e., widely shared, high-status cultural signals (attitudes, preferences, formal knowledge, behaviors, goals, and credentials) used for social and cultural exclusion (p. 156).

But, despite these weaknesses, there is widespread agreement among scholars that Bourdieu's cultural capital theory provides a fruitful framework for exploring the educational stratification among students from dissimilar SES groups (Andersen & Hansen, 2011; Dumais, 2002; Lamont & Lareau, 1988; Lareau & Weininger, 2004; Reay, 1998; Sullivan, 2002).

2.3.3 Operationalisation of Cultural Capital

Bourdieu (1984) proposed that people accrue cultural capital through class-based cultural consumption and participation. That is: members in high-SES groups tend to consume and develop a taste for highly legitimised cultural domains and genres whilst counterparts from lower-SES groups opt for domains and genres of lesser social legitimacy (Bourdieu, 1984).

Following this idea, participation in "legitimised" cultural activities became the most frequent empirical definition of cultural capital, although cultural capital is also measured by other indicators, including: ownership of cultural objects (Bodovski, 2013; Jaeger, 2011; Vryonides, 2009), academic credentials (DiMaggio, 1982), and cultural knowledge (i.e., familiarity with canonical figures and famous landmarks) (Becker, 2010; Sullivan, 2003).

A cultural form gains the status of legitimised if it is universally regarded as subtle, sophisticated, or in some other way worthy. The struggle over the legitimisation of cultural activities, practices and objects, however, is dynamic and may take various forms (Bourdieu, 1989, p. 20). For example, a particular activity can be regarded as legitimised, and gain the status of "highbrow", if a group of experts or professionals affirm it as exceptional, as in the case of educational credentials (Bourdieu, 1989, p.21). Likewise, activities perceived to have some degree of distance from everyday life routines, and activities that require familiarity with esteemed cultural artefacts, are likely to be labelled "highbrow" rather than "midbrow" or "lowbrow".

For members of the dominant class, participation in highbrow activities is an important aspect of cultural capital acquisition and habitus

formation. Moreover, participation in highbrow activities enables the dominators to perpetuate the ownership of symbolic and material goods.

Following Bourdieu's work (1984, 1989), researchers have typically operationalised highbrow cultural capital as participation in activities such as: visits to museums, art galleries or exhibitions; use of the library and enhanced reading habits; attendance at the opera, classical music concerts or jazz performances; and attendance at the theatre or the ballet. By contrast, attendance at pop, rock, folk and traditional music concerts, as well as visits to "arts and crafts" exhibitions, are regarded as participation in lowbrow cultural activities (Andersen & Hansen, 2011; Chan & Goldthorpe, 2005, 2006, 2007a, 2007b; DiMaggio & Mohr, 1985; DiMaggio & Mukhtar, 2004; DiMaggio, 1982; Dumais, 2002, 2006; Gayo-Cal, Savage, & Warde, 2006; Gronow & Southerton, 2010; Jaeger, 2011; Lopez-Sintas & Garcia-Alvarez, 2006; Peterson & Kern, 1996). Other activities that were recently used in research to indicate engagement in more midbrow or lowbrow activities are going to the cinema and spectatorship of sport events (Yaish & Katz-Gerro, 2012).

2.3.4 Empirical Evidence on the Relation between Cultural Capital and Academic Performance

There is now a good deal of research on the relationship between cultural capital and academic performance. Studies consistently show that cultural capital is positively linked to academic outcome. This has been shown by Jaeger (2011, p. 285), who summarised 21 quantitative studies from different countries. In addition, Dumais (2002), who analysed the American "National Education Longitudinal Study" (NELS), demonstrated a positive

association between high-school students' GPA and their cultural capital, as measured by participation in cultural activities, including art, music and drama lessons at school, visits to the library and attendance at concerts. This association remained statistically significant once SES and other control measures were introduced.

Using data from the American NELS, Kaufman and Gabler (2004) found a positive association between junior high school students' participation in OSA featuring music and dance, as well as participation in school music and visits to museums, and these students' likelihood of attending a higher education institution. Nevertheless, there was no such relationship between tertiary education enrolments and whether or not, at junior high school, the student had been to a library, attended concerts or participated in out-of-school art lessons.

Research provides mixed evidence as to whether cultural capital maintains/widens the academic gap among students in dissimilar SES groups, in keeping with the cultural reproduction hypothesis, or narrows this gap, as would be expected from a cultural mobility perspective.

DiMaggio's (1982) research, for example, found positive associations between cultural capital, as measured by American adolescents' interest in and engagement with art, music and literature, and their academic performance in math, English, history, social studies, as well as their overall GPA. DiMaggio's research, however, showed only weak association between parental cultural capital, as measured by the father's education, and students' cultural capital. DiMaggio stated that these findings lend only partial support to the reproduction hypothesis because they provide little indication of an intergenerational transmission of cultural capital.

Using longitudinal data taken from the "Project Talent Survey", DiMaggio and Mohr (1985) found, further, that cultural capital was positively linked to transition into tertiary education. Students who scored higher on a cultural capital index when they were in junior year, were more likely, ten years later, to attend and complete college than peers with lower cultural capital scores. These results remained significant when the students' SES plus a measure of their general academic skills were entered into the models. In addition, no significant interaction effects were found between fathers' number of years in formal education and students' cultural capital on the academic outcomes of interest, i.e., the frequency with which students talked about going to college as well as their college attendance and completion chances. Nevertheless, because these interactions were all negative and near statistical significance, the authors suggested that cultural capital does not bring greater academic gains for students coming from homes with well-educated parents. Based on these findings, DiMaggio and Mohr concluded that the cultural reproduction hypothesis remained unsupported.

Dumais (2006) analysed data from the American "Early Childhood Longitudinal Study" to examine the effect of pre-schoolers' cultural capital, as measured by participation in extra-curricular lessons, on their language and math skills in first grade, as assessed by their class teachers. She found interaction effects between the children's SES and their cultural capital scores on the language and math scores, indicating that the returns on participating in cultural activities are lower for high-SES students than for low-SES counterparts. Furthermore, Dumais showed that there were no significant associations between the home activities parents and children engaged in

and the teachers' assessment scores. These findings suggest, firstly, that home activities may not be a major source of cultural capital acquisition in the pre-school years as oppose to extra-curricular activities. Secondly, the findings indicate that students with low SES gain more academic benefit from participation in extra-curricular activities than high-SES peers. The findings, thus, lend support to DiMaggio's (1982) cultural mobility model.

Another study supporting the cultural mobility hypothesis was carried out by Andersen and Jaeger (2013). In this study, the researchers analysed PISA data on 15-year-old students from six countries: Canada, the UK, Germany, France, Norway, and Denmark. They found that cultural capital, as measured by family cultural possessions, home educational resources, engagement in reading and parent-student verbal interactions has a weaker effect on students' test scores in schools characterised by overall high academic performance than in academically poorly performing schools. Based on these findings, Andersen and Jaeger proposed that, rather than block upward mobility, cultural capital can assist students in moving up in terms of academic achievement.

In contrast to the above findings, Jaeger's (2011) study, in which data from the American "National Longitudinal Survey of Youth – Children and Young Adults" were analysed, showed that elementary school students' reading and math test scores are positively linked to cultural capital, as measured by their visits to museums or concerts and reading for enjoyment. There was also an interaction effect indicating that this positive impact was greater for high-SES students than for lower-SES peers. This result is consistent with Bourdieu's cultural reproduction model, according to which the "payoffs" on cultural capital are larger in dominant groups. In addition,

the same study demonstrated positive associations between students' reading and math achievement and three other indicators of cultural capital, namely the number of books at home, participation in out-of-school activities, and the degree to which parents encourage their children to take up hobbies. However, in these cases, the associations were stronger for low-SES students than for high-SES counterparts. These results lend weight to the cultural mobility assumption postulated by DiMaggio (1982). In response to these contradictory findings, the author suggested that:

> [while] highbrow aspects of cultural capital are mostly rewarded in environments that recognize and appreciate these aspects of cultural capital … indicators of more "practical" aspects of cultural capital - have stronger effects in low and medium SES environments than in high SES environments (p. 295).

A study by Aschaffenburg and Maas (1997), in which the effect of cultural capital on educational transitions in middle childhood, adolescence and early adulthood were examined, provides further evidence in regard to the two competing hypotheses. This study showed, firstly, that, in keeping with the cultural reproduction hypothesis, cultural capital that had been accumulated during the early childhood period had long-term effects on students' educational transitions. This result, which is indicative of intergenerational transfer of cultural capital from parents to children, fits with the cultural reproduction hypothesis. However, the authors showed, in addition, that new stocks of cultural capital were accumulated during the school years. Moreover, these "new" stores of cultural capital were positively

associated with students' educational transition in adolescence and young adulthood, a finding that lends weight to the social mobility hypothesis.

As can be seen from the research reported in the above section, mounting evidence indicates that cultural capital is linked to improved academic outcomes. But, there are mixed results as to whether cultural capital leads to reproduction of the socio-economic gap in the academic outcomes of students or to mobility towards more equal educational outcomes. Likewise, the role of early years' intergenerational transmission of cultural capital in the process of socio-economic stratification in academic achievement has been questioned.

In what follows, I present arguments about the nature of the intergenerational transmission of cultural capital and its role in promoting the educational success of students who grow up in high-SES families.

2.3.5 Concerted Cultivation vs. the Accomplishment of Natural Growth - Lareau's Conceptualisation of Cultural Capital

As noted earlier, Bourdieu (1986) stressed that cultural capital begins to accumulate in infancy, and that this process continues well into the childhood years. Bourdieu's work, however, has been criticised for neither articulating this argument in clear empirical terms, nor offering a detailed account of the process of intergenerational transmission of cultural capital from parents to children (De-Graaf et al., 2000; Lareau & Weininger, 2004).

This theoretical gap has been addressed by Lareau (2002, 2003), who focused on exploring the childrearing practices employed by parents in dissimilar SES groups. Lareau's core argument is that distinct class-related upbringing practices which parents use to foster and oversee their children's

development form a pathway through which cultural capital is transmitted and a habitus is formed.

Lareau (2002, 2003), who conducted ethnographic research exploring the daily lives of American families, reported that parents with high SES tend to employ an upbringing strategy that can be entitled "concerted cultivation", while parents with lower SES frequently pursue a childrearing strategy that can be defined as "the accomplishment of natural growth".

The "concerted cultivation" and "natural growth" childrearing practices can be distinguished by three core aspects: beliefs, language use and behaviour. The first aspect refers to parents' beliefs as to what constitutes good parenting. Lareau (2002, 2003) found, in this respect, that parents with high SES perceive the years of childhood and adolescence as a developmental project, and themselves as the leaders of this project. This logic leads to continual interventions in the children's lives, which aim at supporting and advancing the children's development. By contrast, parents with lower SES generally perceive themselves as caretakers who should make possible the child's spontaneous growth and development by providing material resources and comforts.

The second aspect surrounds the verbal communication between parents and children. Lareau (2003) showed that the "concerted cultivation"-oriented, high-SES parents tend to reason and negotiate with their children more than low-SES parents, and to generally structure their language in ways that elicit responses from the child. In comparison, the "natural growth"-oriented, low-SES parents, tend to use directives and rarely present questions to the child.

The third aspect refers to the actions taken by parents to enrich their children's lives and influence the educational process the children undergo (Lareau & Cox, 2011; Lareau, 2003). Concerted cultivation, in this respect, comprises deliberate attempts made by parents to stimulate their children's cognitive and social skills (Berhau, Lareau, & Press, 2011; Lareau, 2003). This is achieved by providing the child with extended educational opportunities and ensuring his or her progress through the identified educational pathways (Lareau & Cox, 2011; Lareau, 2003). The purpose of these efforts is not only to actively promote the children's immediate educational achievement, but also to prepare them for long-term academic and labour market success (Lareau, 2003). By contrast, the natural growth strategy involves providing the child with greater liberty in determining and constructing his or her daily experiences as well as granting responsibility for the care and education of children to professionals working in the formal educational sector.

This final aspect has particular relevance to the current study because, as Lareau and her colleagues found, the two differing parenting strategies and their implications for children's education go beyond the boundaries of the school (Berhau et al., 2011; Lareau & Cox, 2011; Lareau & Weininger, 2008; Lareau, 2003).

More specifically, research in this vein showed that high-SES parents, who typically adopt "concerted cultivation" logic, consider the after-school free hours as a time slot that should be dedicated, at least in part, to enhancing their children's unique talents, promoting the children's general knowledge and developing their social networks. These parents tend to expect their children's out-of school time to be carefully structured and hence

actively search for out-of-school leisure activities such as organised sports, music, language or drama lessons, which will allow the children to develop their skills (Berhau et al., 2011; Bodovski & Farkas, 2008; Henderson, 2013; Lareau & Cox, 2011; Lareau, 2002, 2003; Vincent et al., 2013).

Lareau (2003) showed that, like the concerted cultivation strategy, the natural growth parenting practice commonly employed by lower-SES parents also goes beyond the formal education frameworks, but in quite the opposite way: it involves providing children with much greater autonomy in structuring their out-of-school free time routines.

Lareau's work on the parenting strategies employed by parents in dissimilar social classes suggests that the concerted cultivation strategy promotes better academic performance in children than the natural growth practice for three main reasons. Firstly, because parents who employ the former strategy tend more frequently and successfully than parents who use the latter strategy to intercede on their children's behalf when the children's progress is at risk, whether due to difficulties the child is experiencing or to institutional barriers (Lareau, 2002, 2003).

Secondly, the concerted cultivation strategy fosters a sense of entitlement and accomplishment in children compared to a sense of constraint and powerlessness that emerges as a result of the natural growth strategy (Lareau & Cox, 2011; Lareau, 2002, 2003; Stefansen & Aarseth, 2011). This may have long-term consequences on how frequently and successfully individuals interact with dominant institutions and hence shape their later life outcomes.

Lastly, children who experience a concerted cultivation upbringing are provided with more opportunities to practise their talents and develop

skills than counterparts who are exposed to the natural growth childrearing strategy (Lareau & Cox, 2011; Lareau, 2002, 2003).

In the UK, Henderson's (2013) analysis of data from the LSYPE lends some support to Lareau's ideas on the links between SES, childrearing practices, children's participation in OSA and academic success. Henderson examined three manifestations of concerted cultivation: parent-child verbal communication, parental involvement with educational institutions, and children's participation in leisure and educational OSA. Her results show that only the last measure of concerted cultivation, namely participation in OSA, is significantly associated with parental SES. Nevertheless, all three concerted cultivation measures are positively associated with GCSE attainment, teachers' perception of students' academic ability and students' perception of their own academic ability, enjoyment at school, and aspirations to proceed into tertiary education. These results hold when SES is accounted for.

Vincent and Ball's (2007) findings from interviews with 71 middle-class parents (most of them mothers) in two locations in London are also consistent with Lareau's ideas. Vincent and Ball (2007, p. 1062) reported that these parents display "enthusiasm" for enrolling their pre-school children in extra-curricular creative and sporting activities. The researchers argued that this early-age concerted cultivation manifestation emerges as a "response to the anxiety and sense of responsibility experienced by middle-class parents as they attempt to 'make up' a middle-class child in a social context where reproduction appears uncertain" (p. 1061). Vincent and Ball noted, furthermore, that even though the vast majority of the interviewed parents spoke negatively about pushing young children to master academic skills,

they showed a clear preference towards engaging their under-fives in enrichment activities which are "fun with purpose". Vincent and Ball concluded that parents encourage their children's involvement in multiple enrichment classes to

> …formulate the beginnings of a CV for the child. A proven track record in music, drama, art or sport {which} can increase a child's attractiveness in a competitive school market (p. 1072).

In a more recent study in which parents of 62 English middle-class black children aged between 8 and 18 were interviewed, Vincent et al. (2013) asserted that

> …the provision of extra-curricular activities for children are part of an assumed, taken-for-granted, aspect of a "good" (middle-class) parenting (p. 438).

Crozier et al. (2008) interviewed 125 English parents with high SES, whose children were in comprehensive state schools. They found that the parents exhibited only slight concern as to whether the school offered lessons such as music, dance and drama, because their children were provided with a routine of enrichment OSA.

The studies of Vincent and Ball (2007), Vincent et al. (2013) and Crozier et al. (2008), however, suffer from empirical weakness since they rely solely on a sample of middle-class parents. Without examining a comparable group of working-class parents it is impossible to determine whether the observed childrearing strategy, which includes the encouragement of

extensive engagement in OSA, is a practice engaged in only by middle-class parents.

Irwin and Elley (2011), in this context, argued that a common practice in current studies into socio-economic inequalities is to overstate intra-class similarities at the expense of variations in the practices exhibited by members of similar class groups. They suggested that there may be less of a dichotomous distinction between middle- and working-class parents in terms of their respective cultural logic and practice.

Building on this perspective, it could be argued that, although the concerted cultivation and natural growth strategies illustrate two ends of a single childrearing axis, families with high and low SES may be located all across the axis, rather than being grouped closer to the extremes. It is also possible that a particular family will be located near the "natural growth" end in relation to a specific aspect of childrearing, and closer to the "concerted cultivation" end with respect to a different dimension. Moreover, regardless of parental SES, childrearing practices may change across time.

Studies by Reay et al. (2001) and Reay and Lucey (2003) can also be used to critique Lareau's conceptualisation of cultural capital and its application in research into children's participation in OSA. According to Reay and her colleagues' perspective on educational choices, choice is a class-influenced practice: individuals in higher-SES groups have access to a wider range of choices and are less constrained than counterparts in lower-SES groups.

Drawing on data collected through interviews with children aged 10 and 11, Reay and Lucey (2003) demonstrated that, for pupils in low-income groups, the transition from primary to secondary school is a "process which

involves being chosen rather than choosing" (p. 131). They showed that these children characterised good schools as geographically and socially far away in contrast to bad schools that were identified as nearer. Nevertheless, when they were asked to choose between the "good" and the "bad", the vast majority of students preferred the latter option, because they believed that bad schools, which pose fewer barriers, would generally fit them better. Reay and Lucey (2003) concluded that educational decisions are in fact a privilege which many low-income families lack.

It could be argued, therefore, that the natural growth practice reflects class constraints rather than choice: OSA may be inaccessible and unaffordable for children in low-SES groups.

2.3.6 The "Homology" vs. "Omnivore-Univore" Hypotheses Debate

Bourdieu (1984, 1986) explained that three distinct (yet complementary) forms of cultural capital, namely the "embodied", the "objectified" and the "institutionalised", mark people's class membership and, simultaneously, constitute symbolic barriers that limit the entry of individuals with a specific stock of cultural capital to particular class groups (Bourdieu, 1984, pp. 64-65).

Bourdieu (1984) proposed that cultural activities, tastes and practices, are organised hierarchically in order of legitimacy, from highbrow to lowbrow. And the consumption of, and participation in, highbrow cultural forms, along with avoidance of participation in lowbrow activities, is a common practice among members of high-SES groups. The accumulation of large stocks of cultural capital through participation in such activities,

Bourdieu suggested, enables members in the upper and middle class to symbolically affirm their dominant status and perpetuate their class privileges. Conversely, members of less privileged groups tend more often to participate in lowbrow activities which bring them no parallel levels of cultural capital and associated social benefits.

According to Bourdieu, this inevitable situation represents a "structural homology", because it links specific practices of consumption and participation with the particular social positions in which people are situated (Bourdieu, 1984).

In the past two decades, however, a dispute has emerged among sociologists exploring the stratification of cultural consumption of adults, concerning the "homology" hypothesis. While some adopted the idea that the traditional Bourdieunian homology argument, which distinguishes highbrow and lowbrow cultural capital and associates them with particular class groups, is universal across time and place, others suggested that there are important temporal and geographical differences in how people from dissimilar SES groups engage in cultural activities.

In the US, Peterson (1992) and Peterson and Simkus (1992), based on analysis of data from the 1982 US "Survey of Public Participation in the Arts" (SPPA), put forward an influential hypothesis, rivalling Bourdieu's traditional one. Their main argument stressed that Bourdieu's homology hypothesis fails to characterise the "cultural" engagement of members of different social class groups in America. In fact, contradicting Bourdieu's predictions, they found that the upper classes exhibited only limited selectivity in the forms of art they favoured. Rather than demonstrating only a taste for a restricted range of highbrow cultural forms, thus showing

"aesthetic exclusivity", members of upper-class segments also showed appreciation of midbrow and lowbrow cultural activities. In comparison, members of the working class favoured a much more limited range of art genres, traditionally identified as popular. The authors concluded that in America, in the 1980s, class stratification in cultural consumption distinguished between the upper-class "omnivores" and the middle- and working-class "univores" (Peterson & Simkus, 1992; Peterson, 1992).

Following on from these empirical findings and consequent theoretical development, Peterson and Kern (1996) later showed, using data from the 1982 and 1992 SPPA sweeps, that in time, the "omnivore" group grew at the expense of the "snobs" group. That is: within a decade, the number of members of the upper class who demonstrated selective "snobbish" highbrow tastes in music declined, while the number of same-class members who exhibited appreciation for musical genres from across the highbrow-lowbrow cultural spectrum increased.

On the basis of these findings Peterson argued that, although the classical highbrow-lowbrow distinction should be rejected in favour of an "omnivore-univore" classification (at least in the case of the US adult population), the idea that cultural capital is indicative of individuals' class membership, and thus plays a role in stratifying American society, still holds (Peterson & Kern, 1996; Peterson, 1992). But, rather than being marked on the basis of their "snobbish" tastes for highbrow genres, the upper-class boundaries and dominance are becoming more widely expressed through the effortless ability to "…'graze' across a wide range of cultural activities, both high and low" (Bennett & Silva, 2006, p. 91). So, while members of the

upper class do not abandon the highbrow genres, they are also able to show appreciation and knowledge of more popular cultural forms.

A different criticism of the homology hypothesis (and, indirectly, of the omnivore-univore hypothesis as well) was presented by Lahire (2003) who claimed that, by focusing primarily on rough group level characteristics such as social class as determinants of cultural consumption, Bourdieu overlooked the importance of the individual's biography in developing a taste for different genres and motivation to participate in cultural activities. Lahire proposed development of a new sociocultural paradigm – the sociology of the individual – that would focus on exploring the diverse, sometimes competing, experiences that influence habitus formation. Bennett and Silva (2006) asserted that this perspective offers…

> …a more complex picture in which the taste profiles of individuals cannot be fitted into a spectrum organized as a series of points between the bipolar extremes of "omnivorousness" and "univorousness" (p. 92).

As noted earlier, Bourdieu's "homology" hypothesis has been supported by a considerable volume of research. Nevertheless, since its formulation, the "omnivore-univore" argument, as well, has received some empirical support. Researchers demonstrated that people with high SES are engaged in a more diverse range of leisure activities than lower-SES counterparts, but that these activities are not restricted to highbrow forms (Garcia-Alvarez, Katz-Gerro, & Lopez-Sintas, 2007; Kane, 2003; Lopez-Sintas & Garcia-Alvarez, 1999; Stalker, 2011).

In the US, DiMaggio and Mukhtar (2004) addressed the question of whether, in the new millennium, participation in the arts remains a stratifying factor. That is: does participation in visual and performing arts still have value in the reproduction of social inequality? To this end, they explored the rates of attendance at museums, galleries and live shows at three time points (1982, 1992 and 2002), and whether these have declined in particular socio-economic groups. Their results showed that, although changes in the attendance rates of particular art forms are evident, during the examined time frame, participation in the arts remained a valuable source of cultural capital. The authors stated that "in participation in high-culture arts events … inequality appears to have increased during the last two decades of the twentieth century" (p. 183). DiMaggio and Mukhtar conclude by arguing that the observed generational changes have not resulted in the arts being a less valued source of cultural capital.

In the UK, Warde et al. (2000) analysed the 1984/5 and 1992 sweeps of the "Health and Lifestyles Survey" (HLS) to examine the omnivore-univore thesis in relation to participation in sport and leisure activities. They discovered that, among the different SES factors, qualifications and income were more closely linked to omnivorousness than social class. In addition, the results supported both the highbrow-lowbrow distinction, by showing a strong middle-class preference for several highbrow genres, and the omnivore-univore thesis, in that middle-class members participated in a wider variety of leisure activities, spanning the highbrow-lowbrow cultural spectrum. In contrast to the American case, Warde et al. found no evidence that, between the two time points, within the middle class, "snobs" were overtaken by omnivores (ibid.).

A series of studies conducted by Chan and Goldthorpe (2005, 2006, 2007a, 2007b), using data from the 2001 "Arts in England Survey" (AES), explored the association between SES and the consumption of diverse cultural forms among individuals aged 20-64. As part of this project, the authors considered the three different hypotheses concerning the link between socio-economic background and consumption of art forms and leisure activities: the homology (Bourdieu), individualisation (Lahire) and omnivore-univore (Peterson) hypotheses.

While exploring participation in visual art activities such as visits to museums or art galleries, craft exhibitions, cultural festivals and events involving video/electronic art, Chan and Goldthorpe (2007b) identified three distinct groups of "consumers": the inactives (59%), characterised by very low, if any, engagement in the respective activities; the paucivores (34%), who "consume not all or just one form of what is on offer but, rather, modest amounts within a somewhat limited range of possibilities" (p. 175); and the omnivores (7%), those who engage in the majority of the explored activities. This analysis of the visual art field demonstrated a deviation from both the classical homology argument and the omnivore-univore dichotomy. However, the analysis showed that the propensity towards being either a "paucivore" or "omnivore" type consumer of the arts, as distinct from being inactive, is positively associated with individuals' social class and level of education. A similar trend was found with reference to being omnivores rather than paucivores, but only in relation to people's academic qualifications. So, while none of the three competing hypotheses was fully confirmed, the results were more consonant with the omnivore-univore hypothesis than with the two other options, meaning that those who are

better educated and hold high-status jobs are more likely to be engaged in a wider range of visual art activities.

Similarly, Chan and Goldthorpe (2005, 2006) showed that the socio-economic distribution of musical tastes, as well as participation in performing arts events (including visits to the theatre and to musical or dance performances) and visits to the cinema, lends weight to the omnivore-univore hypothesis rather than to the homology or individualisation paradigms. That is: in relation to listening to music and attending live shows and the cinema, people with higher-SES characteristics tend to engage in a range of both highbrow and lowbrow genres and event types, while peers in lower-SES groups opt for a considerably more limited range of lowbrow genres.

However, not all researchers agree with Chan and Goldthorpe's conclusions that members of the middle class have shifted from possessing strictly "snobbish" tastes towards ownership of, and participation in, more heterogeneous cultural forms.

By analysing the UK's 2003 "Cultural Capital and Social Exclusion" (CCSE) survey data, Gayo-Cal, Savage and Warde (2006) reached a different verdict with regard to the link between people's socio-economic background and their engagement in culture. Gayo-Cal and his colleagues constructed a "cultural map" showing SES variations in participation in, and preferences for, a wide range of cultural genres in and outside the home environment, including sports, TV programmes, films, books, arts, music and food. This "cultural map" displayed associations between socio-economic background and preference for distinct cultural genres. Members of the middle-class segment, highly educated individuals, or those in older

age groups, showed a strong tendency to engage in highbrow cultural genres, while people from a working-class background, holding lower qualifications, or falling into a younger age group, are inclined towards the more mid-lowbrow genres. In addition, there was no indication that either of the SES groups was engaged in a wider range of activities, although those in a socio-economic position of multiple disadvantage seemed to have been considerably marginalised in terms of cultural participation. Based on these findings, Gayo-Cal et al. concluded that the UK "cultural map" is in line with Bourdieu's homology. Similarly, Gayo-Cal (2006) who carried out further analysis of data from the CCSE to explore British adults' participation in leisure activities outside the home environment, asserted that:

> … if one wants to understand why people exhibit particular patterns concerning leisure, Bourdieu's approach is still useful, but other factors I have identified, like age, ethnicity and gender, also need to be considered (p. 187).

Le-Roux, Rouanet, Savage and Warde (2008) also challenged Chan and Goldthorpe's work. They argued that people's occupational status would provide a better indication of whether class is linked to cultural consumption than a measure of individuals' labour market networks, such as the one used by Chan and Goldthorpe. By analysing data from the CCSE, Le-Roux and her colleagues measured the degree of overlap and separation between different occupational classes, in terms of cultural tastes. The authors conclude that "For some activities class divisions are very apparent, whilst for others they are of limited importance" (p. 1064). For example, they showed that visits to the cinema, as well as attendance at musicals, art

galleries and museums, differed across class groups, with those in high social classes overrepresented in these activities. Conversely, members of lower social classes spent a greater amount of time watching TV than high-SES counterparts. On the other hand, there were no social class variations in the rates of going to nightclubs or pubs. These findings lend more weight to the homology hypothesis than to the omnivore-univore argument.

Drawing on the same dataset, Wright (2006) examined the literary field and showed a connection between occupational class and book ownership, genre preferences, and reading of books, newspapers and magazines. The results showed associations between socio-economic characteristics and the outcomes of interest. Occupational status and education levels, but also ethnicity and gender, were strongly linked to the genres peoples liked and read. Based on findings from this study, Wright argued, in regard to the homology vs. omnivore-univore hypotheses debate, that:

> … despite the changes identified to other cultural fields in terms of broader participation and omnivorousness, tastes for reading are still concentrated within the better educated and within groups of relative socio-economic privilege (p. 137).

The above review of research provides mixed results as to whether the connection between SES and cultural participation among adults in the UK is homologous, as suggested by Bourdieu, or consonant with Peterson's omnivore-univore hypothesis. Yet, this debate over competing hypotheses provides a fruitful framework for exploring the links between SES and

cultural participation and the acquisition of cultural capital by individuals with dissimilar SES.

Thus far, this debate has been widely used to examine adults' cultural consumption and participation. However, it could be equally applicable in studies into children's accumulation of cultural capital and how this varies by SES.

Together with Lareau's concept of concerted cultivation, the homology and omnivore-univore arguments make useful conceptual tools for investigating the links between SES, children's participation in OSA, and academic performance.

The next section, therefore, specifies the ways in which the present research draws upon the theoretical ideas and empirical evidence presented above.

2.3.7 Summary: Cultural Capital as an Explanation for the Association between SES, Participation in OSA and Academic Outcomes

Since Bourdieu's "distinction" (1984), the theory of cultural capital has played a growing role in guiding research on people's engagement in cultural activities and the links between engagement in distinct cultural forms and a range of socio-economic factors (e.g., Chan & Goldthorpe, 2005, 2006, 2007b; Gayo-Cal et al., 2006; Gayo-Cal, 2006; Le-Roux et al., 2008; Silva, 2008; Warde et al., 2000; Warde, Wright, & Gayo-Cal, 2007; Wright, 2006).

Also, researchers examined the associations between cultural capital and the academic outcomes of students from dissimilar SES groups (e.g., Becker, 2010; Bodovski & Farkas, 2008; Dumais, 2002, 2006; Henderson, 2013;

Jaeger, 2011; Reay, 1998, 2004b; Schagen & Schagen, 2003; Sullivan, 2003; Zimdars et al., 2009).

The theory of cultural capital contributes to the present study in three ways:

a) Following Lareau's concept of "concerted cultivation", it is expected that children brought up by parents with high SES would be engaged in leisure OSA to a greater degree than children who live in families with low SES. Moreover, the "concerted cultivation" childrearing practice of the high-SES parents would be manifested primarily via participation of their children in organised activities outside the home environment, of the type that enables children to foster, practise and exhibit their talents.

b) Building on Bourdieu's "structural homology" perspective, it is expected that children's participation in OSA would be closely linked with their SES: children in high-SES groups will be overrepresented in highbrow OSA and underrepresented in lowbrow activities. Children from low-SES families will be overrepresented in lowbrow OSA but not in highbrow OSA.

c) Conversely, following Peterson's line of thinking, it is expected that children from high-SES families would demonstrate an "omnivore" rather than "univore" pattern of participation. That is; they would show no "aesthetic exclusivity" and be overrepresented in OSA from across the highbrow-lowbrow spectrum. By contrast, the lower-SES children would display a univore pattern of participation and be overrepresented in a limited range of lowbrow activities.

To summarise: the theory of cultural capital will be used primarily to explain the associations between participation in OSA and SES, in light of the "homology" vs. "omnivore-univore" hypotheses debate and the distinction

between the "concerted cultivation" and the "accomplishment of natural growth" childrearing strategies. The concept of "concerted cultivation" will also be used to explain the process of intergenerational transmission of cultural capital and the implications for the gap in the academic outcomes of children from families with different SES.

The next section presents the theory of social capital. In the current study, the social capital theory will be used to explain how participation in OSA might benefit the academic outcomes of school-age children. As will be explained in what follows, the theory will also be used to investigate whether participation in OSA may lead to the reproduction of educational stratification, or to mobility towards more equality in the academic outcomes of children from dissimilar SES groups.

2.4 Social Capital Theory

2.4.1 Introduction

Social capital refers to the value the interactions among people bring both to the individual and to the groups he or she belongs to (Bourdieu, 1986; Coleman, 1988, 1994).

In seeking to understand the factors contributing to the academic achievement gap among students from different SES groups, both Bourdieu (1986) and Coleman (1988, 1994) put forward the idea that students in dissimilar SES groups have access to uneven stocks of social capital, and this variance results in robust developmental consequences, including the emergence and reproduction of SES-based educational stratification.

Since then, the notion that interactions among people constitute social capital which may impact on students' outcomes, has influenced both educational research (e.g., Carbonaro, 1998; Horvat, Weininger, & Lareau, 2003; Israel & Beaulieu, 2004; Jarrett, Sullivan, & Watkins, 2005; Morgan & Sørensen, 1999; Morgan & Todd, 2009; Pribesh & Downey, 1999) and public-policy shaping (e.g., Blackshaw & Long, 2005; Gillies & Edwards, 2006; SportScotland, 2005).

But despite the increased attention the theory of social capital has received in the academic milieu and among policy-makers, little use of different social capital perspectives has been made to study school-age children's participation in OSA. While several researchers have previously suggested that participation in OSA constitutes social capital (i.e., Beckett, 2002; Bianchi & Robinson, 1997; Burnett, 2006; Gamoran, López-Turley, Turner, & Fish, 2010; Horne, Lingard, Weiner, & Forbes, 2011; Huang et al., 2007; Jarrett et al., 2005; Light, 2010), whether social capital enables participants in OSA to academically outperform counterparts who do not attend similar activities, and consequently are equipped with lesser stocks of social capital, is a matter of debate (Gamoran et al., 2010; Morgan & Todd, 2009).

Drawing on the ideas presented in this introduction and the identified theoretical gaps, the following sections seek to examine whether, and to what extent, the theory of social capital may help in explaining the links between participation in OSA, SES and school-age children's academic performance. To this end, I shall juxtapose three perspectives on social capital, those derived from Bourdieu, Coleman and Putnam.

2.4.2 The Social Capital Theory of Pierre Bourdieu

The works of Bourdieu (1984, 1986) provide a theoretical foundation for understanding how social ties may foster, or deter, academic success. Bourdieu's perspective on social capital draws on a Marxist tradition and situates the concept in the context of power relations and social stratification. Bourdieu defined social capital as:

> … the aggregate of actual or potential resources linked to possession of a durable network of essentially institutionalized relationships of mutual acquaintance and recognition. This group membership provides members with the backing of the collectively owned capital. Relations may exist as material or symbolic exchanges. Social capital is made up of social obligations or connections and it is convertible, in certain conditions, into economic capital (Bourdieu, 1986, p. 51).

Bourdieu's theory suggests that social capital emerges from deliberate actions members of the dominant class take to develop their networks and perpetuate their group's privileges (Bourdieu, 1984, p. 114). Bourdieu asserted that social capital is the outcome of networks comprised of individuals who have access to desirable resources like wealth, high occupational status, or good educational qualifications (Bourdieu & Wacquant, 1992, p. 119; Bourdieu, 1986). According to this point of view, social capital is an asset that characterises the ties formed among individuals with high SES. Social capital, like cultural capital, is unequally distributed across the SES levels.

Bourdieu argued that people tend to create relationships with other people, places and objects that, based on earlier experiences, they identify as familiar (Bourdieu, 1984). This is why people are very much inclined to build up friendships with individuals from their own social class.

However, while the ties formed by members of low-SES groups are characterised by a small volume of social capital because they offer access to limited favourable resources, the bonds among individuals with high SES create a large stock of social capital; that is, access to a wide range of valuable assets (Bourdieu, 1984). So, human networks are rich in social capital if they involve interactions of members with high SES, and poor in social capital if they emerge from relationships among individuals with low SES. This is because the social capital of a given network derives primarily from the assets the network's members possess (Bourdieu, 1984, p. 114).

Social capital, according to Bourdieu, emerges primarily from interactions in which members with high SES are engaged in two types of activities: first, the exchange of symbolic assets like gifts, greetings or gestures, and second, institutional acts like ceremonies and celebrations (Bourdieu, 1986, p. 51). These exchanges serve multiple purposes, including: verifying people's class membership (while excluding members of other class groups), expanding the boundaries of the family, building and maintaining trust, and passing on socio-economic advantages, such as academic success, across generations (Bourdieu, 1984, 1986).

However, while Bourdieu's theory suggests that academic achievement may be fostered by social interactions, his perspective on the links between SES, social capital and academic outcomes implies that the academic returns to social interactions are greater for individuals in high-SES

groups than for counterparts in lower-SES groups. This is because the interaction of high-SES groups, compared to that of those with low SES, creates greater stocks of social capital, giving access to better symbolic and materialistic resources. Access to such favourable resources, in turn, benefits the cognitive development and academic success of students belonging to high-SES families.

In the context of the present study, Bourdieu's line of thinking can be interpreted as follows: participation in OSA provides parents and children with the opportunity to build up social ties which give access to a range of resources. Exposure of the child to such resources can promote his or her academic performance. But, because the distribution of valuable symbolic and concrete resources is uneven in networks comprised of members with dissimilar SES, children with high SES are more likely to gain access to valuable resources than low-SES children. As a result, children in the former group are more likely than those in the latter to benefit academically from the ties accumulated through participation in OSA.

So, taking up Bourdieu's social capital perspective, it is expected that children's engagement in OSA would be more strongly associated with better academic performance in high-SES children than in low-SES children.

A different point of view as to the implications of social capital for the academic outcomes of students from dissimilar socio-economic backgrounds has been proposed by Coleman (1988, 1994). The following section, therefore, introduces Coleman's social capital theory.

2.4.3 The Social Capital Theory of James Coleman

Following a structural-functionalist perspective (a tradition going back to Durkheim), Coleman (1988, 1994) conceptualised social capital as the resources embedded in human networks, which arise from people's day-to-day interactions:

> Social capital is defined by its function, it is not a single entity, but a variety of different entities having characteristics in common: they all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure (Coleman, 1994, p. 302).

Coleman (1988, 1994) argued that social capital, and the positive outcomes associated with it, are public goods that can be found in networks of people with various levels of SES, rather than an outcome of relationships taking place only among individuals belonging to high-SES groups. He suggested that social capital may even supplement or compensate for the lack of other forms of capital (Coleman, 1994, p. 308).

Nevertheless, Coleman acknowledged the possible limitations and drawbacks of social capital, stating that:

> Like physical capital and human capital, social capital is not completely fungible, but is fungible with respect to specific activities. A given form of social capital that is valuable in facilitating certain actions may be useless or even harmful for others (Coleman, 1994, p. 302).

Coleman also proposed that the emergence of social capital depends on the trustworthiness of the social environment (Coleman, 1988, p. S117). Moreover, if it is not maintained by continuous interactions, social capital may become depleted (Coleman, 1994, p. 321).

In his theoretical and empirical work, Coleman focused primarily on the role of social capital in fostering human capital, exploring how variations in the social ties people form affect the development of cognitive skills and the acquisition of knowledge and educational credentials.

Coleman (1988, 1994) argued that the networks people construct differ by the degree to which they are "closed" or "open", and that this variation results in marked inequality in the academic outcomes of individuals in different networks. He suggested that the more frequent the interactions among members in a given network are, the more "closure" this network has, and the greater the network's social capital is. Likewise, greater social capital emerges from "intergenerational closure", that is, ample ties among parents of same-age pupils (Coleman, 1988, pp. S105-S106; Coleman, 1994, p. 319).

In explaining the processes that enable interpersonal relationships to positively influence students' academic outcomes, Coleman (1988, 1994) outlined three forms of social capital: (a) information channels, (b) mutual obligations and expectations, and (c) shared norms and effective sanctions.

The first form of social capital, information channels, provides people with access to a greater volume of knowledge, which in turn may constitute a basis for informed actions (Coleman, 1988, p. S104). On this view, frequent interactions within the family and among members in the wider community can aid children's academic performance in two ways: firstly, by

equipping the children with greater general knowledge, which may provide them with a competitive advantage over peers with access to a more limited scope of knowledge; and secondly, by familiarising their parents with a wider range of educational opportunities, within and outside the school, and better knowledge of what is available. This advantage could allow parents to make more informed choices regarding their child's educational pathways and thus to get him or her into an academic programme that best fits the child's developmental needs.

The second form of social capital, namely mutual obligations and reciprocal expectations, is illustrated by Coleman (1988) as follows:

> If "A" does something for "B" and trusts "B" to reciprocate in the future, this establishes an expectation in "A" and obligation on the part of "B". This obligation can be conceived as a credit slip held by "A" for performance by "B". If "A" holds a large number of these credit slips, for a number of persons with whom "A" has relations, then the analogy to financial capital is direct (p. S102).

A greater volume of interactions among members in a particular network, according to this picture, has the potential to create a larger store of "credit" which members can utilise to achieve certain ends. In the educational field such credit could be reclaimed, for instance, by a parent requesting fellow parents to assist with organising a particular OSA or escorting their child to an already existing programme, and thereby exposing the child to a richer out-of-school experience.

The third form of social capital described by Coleman refers to the ability of members of dense networks to reach a good degree of consensus

regarding wanted and unwanted behaviours, and enforce these behaviours by imposing sanctions (Coleman, 1988, 1994). In Coleman's functionalist view, norms and sanctions allow societies to function. This idea suggests, for example, that, in networks rich in social capital, norms that relate to the education and schooling of children are more likely to be enforced effectively or, better yet, internalised by its members. School lessons, as well as participation in OSA, constitute opportunities for children to practise normative behaviours as well as for educationalists to reward children who display such behaviours.

In contrast to Bourdieu's perspective, Coleman's approach suggests that the academic returns to social capital are dependent not on the SES of those holding it, but rather on the characteristics of their networks. Large networks in which members engage in frequent interactions create larger stocks of social capital than small networks or networks with less frequent interaction. The academic gains are expected to be greater for members of larger or tightly closed networks than for those in smaller, looser networks.

In his own research on social capital and educational outcomes, Coleman (1988) analysed data from the US "high-school and beyond" survey. The study shows that the dropout rates of adolescents in public schools are negatively associated with social capital, as measured by intergenerational closure, parenting composition and parents' educational expectations. Coleman found, in addition, that the percentage of pupils who dropped out of high-school was higher in public schools and independent private schools than in private Catholic schools, a finding he attributed to the greater levels of intergenerational closure, measured by attendance at religious services, of the latter schools. Furthermore, the study demonstrated

a negative association between the dropout rates of pupils in public schools and residential mobility, a proxy measure of intergenerational closure which captures the number of times families migrated across geographical locations (Coleman, 1988).

A decade later, Carbonaro (1998), found similar trends in analysis of data from the NELS. Carbonaro showed that the dropout rates of American students are negatively linked to parental expectations and aspirations, parent-teen and parent-school connections, parent monitoring, church attendance, and intergenerational closure.

More recently, Morgan and Todd (2009) focused on the impact of intergenerational closure and educational outcomes of US high-school students in public schools and in private Catholic schools. In this study, Morgan and Todd analysed representative data from the "Education Longitudinal Study" (ELS) survey. They found, firstly, that the positive association between intergenerational closure and math scores is stronger for students in Catholic schools than for students in public schools. One possible explanation for that is the higher percentage of students in Catholic schools coming from two-parent families, a traditional measure of social capital that the authors did not account for. It could also be that parents who enrol their children in Catholic schools are more involved with their children's education than parents of children in public school, with this difference leading to variation in the outcome of interest. Morgan and Todd's study showed, in addition, that in the two examined school sectors, the positive association between intergenerational closure and math scores cancels out with the introduction of SES, students' behavioural problems, students' and parents' educational expectations, and parental involvement with the school.

The authors suggested that the association between intergenerational closure and students' achievement may be mediated by the above-listed factors.

2.4.4 Operationalisation of Social Capital

Social Capital as Parental Educational Expectations and Aspirations

As evident from the above studies (i.e., Carbonaro, 1998; Coleman, 1988; Morgan & Todd, 2009), among its various empirical interpretations, social capital has been operationalised as parental educational expectations and aspirations. This conceptualisation raises the question of whether networks with different levels of SES place similar importance on academic success.

Studies show that parents tend to agree, irrespective of their SES, that academic success is an important factor in their children's lives (Crozier, 1999; Irwin & Elley, 2011; Lareau, 1996). For instance, a random telephone sample of around 2000 parents of children aged 5-16 in England shows that the vast majority of parents/carers agree that it is important for children and adolescents to attend school regularly (96%), that parents/carers should encourage their children to get the best grades they can (96%), that school helps children to acquire important life skills (90%), that a good education would help their child get ahead in life (97%), and that gaining educational qualifications would help their child get a better job (93%) (Dalziel & Henthorne, 2005, p. 2). In Scotland, among parents of primary 1 students, 88% reported that they would like their child to attend college or university in the future, with the percentages differing modestly between parents in

managerial/professional occupations (92%) and parents who are not in paid work (82%) (Bradshaw et al., 2012).

However, even if academic success is equally valued by networks characterised by different levels of SES, it could be that these networks are dissimilar in the perceptions their members hold regarding what constitutes academic success.

In this connection, Boudon's (1974) Rational Action Theory (RAT) suggests that the educational choices people make rely heavily on social class. This is because the academic ambition of individuals is relative to their social starting point. Breen and Goldthorpe (1997) explain this idea as follows: people seek to acquire skills and qualifications which will enable them to preserve their current class position or, at the very least, to avoid downward mobility. Within the framework of RAT, Breen and Goldthorpe developed a model of "relative risk aversion" (RRA) in which risk aversion behaviour is defined relative to the social class of the parents. So, although parents in different class groups may share similar aspirations and hopes for their children, because they differ in their "relative risk aversion", they are likely to undertake dissimilar actions to promote their goals when they reach transition points where they must choose between competing educational routes. The choices they make at these key transition points contribute to the reproduction of class inequalities in educational outcomes, since middle-class parents are more likely than their working-class counterparts to choose advanced educational routes for their children.

Lareau (1987) explored social class variations in parental educational expectations. She found that, while working-class parents of elementary school children in the US hope that their children will not fail to get a high-

school diploma, middle-class parents take their children's high-school graduation for granted and expect them to proceed into tertiary education. Similarly, researchers showed that even the choice of institution and field of study at tertiary level is dependent on SES (Reay, 1998; Van-De-Werfhorst et al., 2003).

Taken together, these studies indicate that, although academic success is considered important across all SES groups, academic attitudes and choices differ by SES. Essentially, therefore, it could be argued that educational expectations and aspirations, a manifestation of social capital, are very much a representation of the positioning of people within the social structure. This idea is in line with Bourdieu's perspective, within which interactions among individuals with high SES, compared to networks comprised of members with lower SES, generate larger stocks of social capital which may bring greater academic gains.

Social Capital as Parental Involvement

A related question to the one discused in the previous section is whether parents with dissimilar SES endorse similar practices to promote the academic success of their children. This question can be situated in the context of research in which social capital is defined as parental involvement.

The concept of parental involvement refers primarily to the engagement of parents in their children's education by interacting with the school on educational matters. In addition, parental involvement can be manifested by parents taking part in orchestrating and assisting with their children's learning activities within and outside the home environment

(Crozier & Davies, 2007; Crozier, 1999; Dearing et al., 2006; Desimone, 1999; Hill et al., 2004; Jeynes, 2005).

Research in this vein shows that the degree of parental involvement is linked to SES: parents with high SES are more frequently involved in their child's schooling than low-SES counterparts. For instance, Jeynes (2005), who conducted a meta-analysis of 41 studies, found that there is a positive association between elementary students' academic success and parental involvement, and that parental involvement is negatively linked to SES, as measured by the parents' income and education level.

In the UK, Crozier (1997) who conducted a 3-year research project involving parents of children aged 7-11, found that, in their relations with the school, middle-class parents exhibit an "active consumer" approach and tend to intercede more extensively on their children's behalf (p. 188). The middle-class parents' interventions included monitoring the child's educational progress, gathering information regarding the child's performance at school, helping with school tasks, and presenting demands on the child's behalf. In comparison, the working-class parents display a more passive approach: they rarely intervene, and generally perceive teachers as professionals who possess superior knowledge on how children should be educated (Crozier, 2007).

Similarly, Bradshaw et al. (2012) found that Scottish parents with higher occupational status, better education and higher incomes, compared to lower-SES parents, are more involved in their child's school activities at primary 1. The higher-SES parents initiated a greater number of contacts with the school, requesting information on the child's academic progress, the subjects learnt and other school matters.

In addition, studies suggest that the strategies parents from different SES groups use to support the academic success of their children vary in their effectiveness. In the US, Hill et al. (2004), who tested Coleman's hypothesis, showed that the effect of parental involvement at 7th-grade on students' educational aspirations, behaviour and achievement at 8th-grade, 9th-grade and 11th-grade, differ by the students' SES. For students with highly-educated parents, parental involvement is associated with reduced behaviour problems at 8th-grade but not with higher aspirations or better grades. Nevertheless, lower levels of behaviour problems at 8th-grade are associated with better 9th-grade math and English scores and with higher 11th-grade academic aspirations. Conversely, for students with poorly-educated parents, parental involvement is positively associated with students' aspirations, but not with their behaviour or grades. Hill and her colleagues suggested, firstly, that for highly-educated parents, promoting the academic success of their children may be a simpler task than for parents with lower qualifications, and secondly, that the positive effect of parental involvement on students' achievement may be a result of greater control over students' behaviour at school.

In the same vein, Horvat et al. (2003) found that parents in different class groups differ in the extent to which they utilise their social ties when they attempt to influence the school's activities. The authors showed that working-class parents tend to act on an individual basis, while middle-class parents are more likely to engage in collective action and therefore are more succesful in influencing the school.

Lareau (1987) and Lareau and Horvat (1999) argued that not only do working-class parents tend to display lower levels of parental involvement

than middle-class parents, but also their relationships with teachers are less positive. For instance, Lareau (1987) reported that teachers expected parents to inform them about the educational routine the students maintained at home, and felt frustrated that low-SES parents did not provide such information. In addition, Lareau observed that, during house visits, low-SES parents seem uncomfortable and facilitate little interaction with their child's teacher.

In the UK, Crozier (1999) noted that working-class parents perceive themselves as providers of educational support rather than as equal partners in their children's school experience. Crozier asserted that the working-class parents in her study

> … had concerns ranging from exercise books not being marked, to their child's potential not being fulfilled, to their child being unmotivated. However, rather than go to the school to make demands upon the teachers or to ensure that the teachers were "doing their job", there was amongst these parents an overwhelming sense of trust placed in the professionals to fulfil their role (Crozier, 1999, p. 319).

This research lends support to Bourdieu's social reproduction approach: it suggests that high-SES parents' involvement in school, an indicator of social capital, is more effective than the interventions of low-SES parents.

By contrast to the above findings, however, a study by Lewis and Forman (2002) demonstrates that, while working-class parents form functional interactions with school personnel, the interactions between middle-class parents and teachers are tense due to the frequent attempts

made by the latter group of parents to influence the school's agenda and shape its space.

Similarly, Lareau and Lopez-Munoz (2012), who explored a group of middle- and upper-class parents, found that very high levels of parental involvement in school led to the emergence of tension and conflicts, especially when the parents acted collectively. Among other things, this was due to the parents' different priorities and the time and energy the school had to invest in negotiating with them.

Morover, Dearing et al. (2006), who followed children from low-income families from kindergarten to fifth-grade, showed that an increase in the level of parental involvement between the pre-school years and the fifth-grade period led to improvement in children's literacy attainment.

So, studies also provide evidence, as Coleman suggested, that social capital may compensate for the lack of other resources and benefit the academic outcomes of children who live in socio-economically disadvantaged circumstances.

Thus, it could be concluded that, on the one hand, studies indicate, in keeping with Bourdieu's paradigm, that the academic returns to parental involvement are somewhat greater for students from high-SES families than for peers who grow up in low-SES homes (Hill et al., 2004), and that parents with high SES are more likely than low-SES parents to secure the academic success of their children because they are better able to "work the [educational] system" (Crozier, 2012, p. 3) (Crozier, 1997, 1999; Horvat et al., 2003; Lareau & Horvat, 1999; Lareau, 1987).

But, on the other hand, studies also show that low-SES parents facilitate more productive relationships with school personnel than high-SES

parents (Lewis & Forman, 2002); that too much parental involvement exhibited by upper-middle-class parents leads to conflicts with the school (Lareau & Lopez-Munoz, 2012); and that parental involvement is associated with improvement in the attainment of low-SES children (Dearing et al., 2006). These studies are consistent with Coleman's perspective according to which academic gains from social capital are also expected for the less socio-economically advantaged children.

2.4.5 Criticisms of the Theory of Social Capital

The studies discussed in sections 2.4.3-2.4.4 lend support to the argument that social capital has positive impacts on academic outcomes (i.e., Carbonaro, 1998; Coleman, 1988; Dearing et al., 2006; Hill et al., 2004; Jeynes, 2005). Furthermore, the research reported in section 2.4.4 provides mixed evidence as to the possible links between SES, social capital (in the form of parental involvement), and academic outcomes. However, this research also exposes one of the weaknesses of the theory of social capital: the lack of clear definition of social capital itself.

Both Bourdieu's and Coleman's perspectives were criticised by scholars who argued that their ambiguity creates difficulty in deriving consistent empirical definitions and may even lead to contradictory interpretations of the same umbrella concept (e.g., Horvat et al., 2003, p. 321; Morrow, 1999a, p. 746; Portes, 1998, p. 5). It could be that the studies reported earlier reached dissimilar conclusions about the associations between SES, parental involvement and academic outcomes due to the usage

of different variables to measure the concepts of interest, or because of other methodological variations across these studies.

Indeed, the theories of Bourdieu and Coleman leave plenty of room for different interpretations of social capital, hence leading to the emergence of multiple empirical operational definitions of the same overarching concept. Consequently this lack of clarity creates difficulty in building on existing findings.

In addition to its ambiguity and relative simplicity, the theory of social capital has attracted criticism on other grounds. Portes and Vickstrom (2011) argued that the paradigm suffers a tautological fallacy because social capital refers both to human interactions (cause) and the outcomes of these interactions (consequences). This may lead to "circular reasoning" (Dika & Singh, 2002, p. 44) and methodological confusion. For example, trustworthiness can be regarded as an attribute of the shared values which constitute social capital, an outcome of social capital, or both. Similarly, educational expectations/aspirations can be used either as a measure of social capital, if they are perceived as representing a structural element of networks, or as an academic outcome.

Leonard (2004, 2005) and (Morrow, 1999a, 2001) furthermore, noted that, while the majority of research on social capital has focused on adults' social capital and its beneficial impacts on children's development, children's own social networks remained largely unexplored. In a study of working-class families in Northern Ireland, Leonard (2005) showed how students aged 14-16 manage to create their own social capital as well as to convert this social capital into financial profit. The students in Leonard's study developed

a peer network independent of their parents' connections, which functioned as an informal "babysitting agency" and helped them in getting paid jobs.

In relation to children's social networks, Morgan and Sørensen (1999) found, using data from the US NELS, that the number of close friends attending the same school was positively associated with math scores of high-school students. In addition, Pribesh and Downey (1999), who analysed the same dataset, found that the loss of ties with peers as a result of residential mobility was related to poor academic achievement at school. This may be partly because, as Morrow (2001) showed, school mates are important suppliers of emotional support for school-age students as well as an important source of advice.

Schuller, Baron and Field (2000), in addition, argued that, by focusing primarily on the nuclear family, the theory overlooked the possibility that social capital may develop among people in non-traditional living arrangements.

Following the work of Granovetter (1973, 1983) on the role of weak ties in establishing channels through which knowledge and innovations can be imported into networks, Portes (1998) criticised Coleman for placing too much emphasis on "closure" and "intergenerational closure" as sources of social capital. Granovetter (1973) suggested that sporadic interactions with social agents outside the setting of the family or the circle of close friends may equip an individual with resources otherwise out of reach. Therefore, the benefits weaker ties can bring to the individual and the group surpass the value of the strong-dense relationships that usually characterise small and homogeneous networks.

Granovetter's "weak ties" hypothesis was not referenced in the works of Coleman and Bourdieu on social capital. Yet, the idea that different types of social ties may be beneficial to the individual, and the society as a whole, was discussed in detail in the writings of Robert Putnam. The following section presents Putnam's social capital perspective and relates the concepts he put forward to the current research.

2.4.6 Bonds, Bridges and Ties – The Social Capital Perspective of Robert Putnam

While Coleman's and Bourdieu's theories focused on the formation of social capital primarily at the individual level, within the family and the immediate circle of acquaintances, Putnam expanded the concept of social capital to accommodate processes taking place in communities, cities and nations (Putnam, 1993, 1995). Putnam (1995) defined social capital as follows:

> "Social capital" refers to features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit (p. 67).

In his writings on social capital in Italy and the US, Putnam argued that three different components of social capital that emerge as a result of frequent human interactions, namely, "trust", "solidarity" and "reciprocity", have positive implications for individuals and societies. More specifically, these attributes of social capital promote democracy, boost financial prosperity, reduce crime rates and health problems, advance educational

achievement and provide individuals with a greater sense of personal safety (Putnam, 1993, 1995, 2000).

Putnam's work emphasised the importance of civic engagement, that is; participation in groups such as religious organisations, trade unions, professional organisations, voluntary associations and clubs, in the creation of social capital (Putnam, 1993, 1995). Empirically, he introduced a range of measures, including: indicators of trust; informal sociability; community volunteerism; engagements in public affairs; group memberships; availability of public institutions and services, and other measures (Putnam, 1993, 1995, 2000).

In "Bowling Alone", Putnam (2000) discussed how the falling levels of public engagement among people in the US has led to the decline of social capital in America. This idea, however, has been critisied by Wills (2001), who argued that Putnam concentrated on the decreasing number of members in specific groups, including bowling leagues and churches, and overlooked the rise in the number of people taking part in other groups such as self-help organisations.

Putnam's work has also been criticised for placing only slight emphasis on the unwelcome consequences of group affiliation and shared values. In this connection, Halpern (2001) pointed out that not all social ties are beneficial for society. For instance, organised crime or gangs are social networks, but involvement in them does not bring positive outcomes for the public.

Following Granovetter (1977), Putnam (2000) offered a noteworthy distinction between "bonding" (exclusive) social capital and "bridging" (inclusive) social capital. Bonding social capital characterises homogeneous

networks in which repeated interactions take place among like individuals; for example, close family members, followers of a religious or interest group or people with similar SES. In contrast, bridging social capital is a characteristic of heterogeneous networks which form through inter-group interactions of a more episodic or loose nature (Blackshaw & Long, 2005; Putnam, 2000). Bridging social capital may emerge from encounters of distant friends and relatives, as well as as through interactions among work associates, colleagues, audiences, spectators and clientele.

Putnam (2000) did, however, show awarness of the dark side of social ties. He asserted that bonding social capital is beneficial as it helps in "getting by" and ensures high levels of support in times of distress. However, bonding social capital may also have negative consequences such as segregation, between-group conflicts, and restricted access to information and resources. Morrow (2001), who examined the formation of social capital among English adolescents in two schools, provided an example of the negative aspects of close social ties. She observed that students felt pressured to keep up with the latest trends in fashion in order to be accepted by their peers, and lacked a sense of freedom to deviate from the acceptable brands.

In comparison, Putnam (2000) described bridging social capital as a source of knowledge and opportunities that are not available within the immediate circles. Bonding social capital, hence, is a machanism through which people may "get ahead". This is even though bridging social capital may lead to a clash over desirable resources.

Woolcock (2001) and Szreter and Woolcock (2004) extended Putnam's conceptualisation by outlining a third type of social capital: "linking" social capital. The authors defined linking social capital as:

> … norms of respect and networks of trusting relationships between people who are interacting across explicit, formal or institutionalized power or authority gradients in society (Szreter & Woolcock , 2004, p. 655).

With this, Szreter and Woolcock suggest that social capital has a vertical dimension: it can emerge from connections among individuals positioned in different strata and between individuals and societal power structures (Woolcock, 2001). So, at the horizontal level, bonding social capital refers to strong connections between like people, while bridging social capital relates to looser ties that enable inter-group cooperation, but involves relationships with individuals of more or less similar status. At the vertical level, linking social capital is the asset that develops through interactions among members who possess different amounts of privilege and who are positioned in various proximities to societal power structures. For this reason, Field (2005) suggested that linking ties "enable people to access an even wider variety of resources than bridging social capital", and, Hawkins and Maurer (2009), commented that "linking social capital is the result of the weakest relationship but the most valuable outcome" (p. 1780). However, Szreter and Woolcock (2004) warn that, like the other forms of social capital, linking social capital may entail negative outcomes such as discrimination, corruption, and suppression (p. 655).

As with the social capital perspectives of Coleman and Bourdieu, in the work of Putnam children are not deemed prominent agents who actively build up social capital. Nevertheless, several researchers have explored the formation, usage and implications of bonding, bridging and linking social capital in children.

Leonard (2005), whose qualitative study of working-class families in Northern Ireland was mentioned earlier, observed that, although both adolescents and adults held large stocks of bonding social capital, there was no indication of bridging social capital within these communities: the networks adolescents and parents constituted spread within the immediate community but did not reach outward to the surrounding localities. Similar findings were presented by Morrow (2001) in a study of English adolescents. Morrow showed that students created dense bonding ties; nevertheless:

> Linking social capital, enabling access to power structures and influential others, was also clearly somewhat lacking for the young people in the study (p. 53).

In a related vein, Miller (2010) studied 35 US teenagers in an after-school entrepreneurship programme for students from both public and private schools to explore the manifestations of social capital and its impacts. He argued that students who took part in the programme benefited both from horizontal bridging ties that were developed among students from different educational institutions, and from vertical bridging ties between students and staff. However, since Miller followed the students over a short period of time, it is questionable whether these multiple forms of social capital, and the perceived benefits they brought in terms of better communication and organisational skills and stronger connections to the wider community, remained after the programme terminated.

Horne et al. (2011) explored the formation of social capital among adolescents who participated in sports in three Scottish independent schools. The authors noted that the focus on competitiveness and achievement,

manifested by a high level of training and numerous competitions, led to the development of bonding ties among the young athletes. But at the same time, these characteristics of elite sport inhibited the creation of bridging and linking forms of social capital that could otherwise be developed through interactions with athletes from non-independent schools.

A study of second-generation immigrant women aged 16-25 produced similar results, indicating that participation in team sports is strongly linked to strengthening already existing bonds, but not to creating bridging ties with, for example, non-immigrants (Walseth, 2008).

Leonard (2004) however, criticised the concepts of bonding and bridging social capital for their oversimplicity. Researching working-class Catholics in a highly deprived area in Belfast, she observed that "communities, rich in bonding social capital may mask internal inequalities" (Leonard, 2004, p. 935). That is: even within a community or group rich in dense ties, reciprocity among the members may be selectively constructed, including some and excluding others. In addition, according to Leonard, it is not obvious that people can make the leap from bonding to bridging social capital. She pointed out that the development of bridging social capital may be a highly complex and demanding task for people in disadvantaged circumstances (Leonard, 2004).

On this point, Li, Savage and Warde (2008) who analysed data from the "Cultural Capital and Social Exclusion" survey, said that in regard to the existence of interactions between individuals with different levels of SES:

> In general, social capital in Britain is not distributed in ways which would facilitate significant amounts of "bridging" or "linking" between diverse groups. Those with most bridging

> capital are the privileged service class who also enjoy strong "bonding" social capital (p. 207).

In addition to Leonard's criticism, I argue that although bonding, bridging and linking social capital have been discussed and applied in a good deal of research, the differences between these three forms of social capital are blurred and that, hence, there is confusion as to their operationalisation as distinct forms. For instance, Urwin et al. (2008) used participation in clubs and organisations to gauge individuals' linking social capital, while in an earlier work of Putnam (1993), parallel information has been used as an indication of bridging social capital. In other studies, bridging and linking social capital are used interchangeably (e.g., Burnett, 2006; Hawkins & Maurer, 2009; Horne et al., 2011).

Because of this ambiguity, in the present study I shall refer only to bonding and bridging social capital. Following the ideas of Putnam, I shall conceptualise bonding social capital as an asset that emerges from frequent interactions between family members and the immediate circle of close friends, usually in the home and its surroundings. Such social capital is beneficial as it offers high levels of emotional support and advanced trust-based reciprocity; however, it can also have negative aspects such as peer pressure and access to restricted resources.

In contrast, I shall conceptualise bridging social capital as an asset that emerges from infrequent encounters, typically taking place outside the home environment. Bonding social capital is beneficial as it may enable access to knowledge and resources that are not available within the immediate circle of friends and family members. A similar distinction has

been drawn by Van-Ingen and Van-Eijck (2009) in their work on the relations between leisure, social capital and civic engagement in Britain.

I shall also adopt Coleman's perspective according to which both bonding and bridging social capital should promote greater academic achievement by developing information channels as well as shared obligations, expectations and norms.

I propose that high levels of engagement of children in familial activities in the home environment enlarge their stores of bonding social capital. In comparison, children's participation in activities outside the home introduces the opportunity to interact with non-familial members and to create bridging social capital with both peers and adults. Young children's participation in activities that are not home-centred may also expand parents' bridging social capital and connect them to a broader network of relationships within their communities.

2.4.7 Summary: Social Capital as an Explanation for the Association between Participation in OSA, SES and Academic Outcomes

It is evident that, since the late 1980s, these distinct approaches to social capital have inspired a variety of studies in the social sciences. Yet, there has been relatively little use of the social capital paradigm to inform the research design and interpretation of results in studies surrounding the issue of school-age children's participation in OSA and the implications of participation in such activities for their academic outcomes.

As has been noted in sections 2.4.5-2.4.6, the theory of social capital has limitations. But, despite the shortcomings discussed, this theory has

merit, as it provides a useful framework for explaining the links between school-age children's participation in different types of leisure OSA, SES and academic outcomes.

The present research does not attempt to establish a causal pathway between social capital and academic outcomes, but it does address the theoretical gap identified here by applying the concepts discussed above to explore the implications of engagement in various types of OSA for the academic outcomes of children from dissimilar SES groups.

There are two constrasting perspectives in regard to the links between SES, social capital and academic outcomes. On the one hand, the works of Coleman (1988, 1994) and Putnam (1993, 1995, 2000) suggest that larger stocks of social capital are beneficial to the academic outcomes of children irrespective of their SES. On the other hand, the writings of Bourdieu (1984, 1986) assert that social capital, together with its associated beneficial outcomes, is an asset unique to the dominant class. In Bourdieu's account, networks of socio-economically advantaged members constitute a rich source of social capital, while networks comprised of individuals with low SES suffer social-capital deficit. In fact, the former networks play important role in the intergenerational transmission of status and power.

Based on the review presented in section 2.4, I argue that:

a) Following Coleman's concepts of "closure" and "intergenerational closure", it is expected that attendance at OSA would be positively associated with the academic outcomes of all children, irrespective of their SES. This is because attendance at OSA (compared to non-attendance or low-level attendance), represents greater stocks of social capital in the form of

expectations, obligations, norms and information channels, all of potential benefit for children's academic development.

b) By contrast, building on Bourdieu's perspective, it is expected that the positive association between participation in OSA and academic outcomes will be stronger for children who grow up in families with high SES than for counterparts who are brought up by parents with low SES. This is because social capital accumulates to a greater degree in networks of members with high SES than in networks comprised of individuals with low SES. Essentially, this means that participation in OSA exposes children from high-SES groups (directly or indirectly, through their parents) to favourable symbolic and concrete resources that peers from lower-SES groups who attend OSA are less likely to encounter.

c) Furthermore, in keeping with Putnam's concepts, it is expected that the academic gains from OSA would depend on whether a particular activity allows the accumulation of bridging social capital, on top of bonding social capital. This is because, even though bonding relations entail benefits, bridging ties provide a wider range of resources and greater opportunity for development. Following this idea, it could be expected that participation in activities outside the home environment, in which children and their parents may establish inter-group contacts, will be associated with greater academic gains than engagement in home-centred activities.

2.5 Out-of-School Activities (OSA): Definitions and Empirical Evidence

2.5.1 Introduction

While there are numerous US studies as well as a slowly emerging body of UK research on school-age children's use of out-of-school time, there is neither a unified terminology that researchers draw upon nor agreement on the characteristics and boundaries of OSA. The next sections will discuss the various definitions of OSA and present the particular types of activities that will be explored in the current study.

To date, a wide range of terms have been used by researchers and policy-makers to refer to activities directed at children and adolescents from pre-school to secondary school age, taking place before or after the regular school day or during school holidays. The terms include, for example: "out-of-school care", "school-age childcare", "after-school activities", "after-school care arrangements", "after-school clubs", "extracurricular activities/ programmes", "recreational activities", "enrichment programmes", "non-formal education", " holiday play-schemes" and others (Brown-Goss, Wimer, & Little, 2008; HFRP, 2008a; Lowden, Garside, & Hall, 2005; Malcolm, Wilson, & Davidson, 2002; NICHD, 2004; Scottish Executive, 2003).

The different terms noted here vary in aspects such as the degree to which the activities for selection in a particular programme are structured by and/or supervised by adults, or the purpose and diversity of the activities offered by a given provider. Other features that might distinguish different OSA are the age range and number of participants per activity, the number of days per week (or hours per day) when the activities are on offer, the

location and premises where the activities take place, their funding sources and client-end costs, child-staff ratio and staff qualifications, and other considerations (Larner et al., 1999; Mahoney et al., 2004; MARS, 2005; Munton et al., 2001).

To offer a comprehensive perspective on school-age children's participation in OSA and how participation in such activities may be linked to the socio-economic achievement gap, the present study will explore three distinct categories of OSA: social-group OSA, commercial-public OSA and home-centred activities. This will allow the study to explore how exposure to a range of leisure contexts may narrow, widen or maintain the gap in the academic performance of school-age students from dissimilar SES groups.

In the next sections, I specify these three different OSA categories and provide empirical evidence as to participation in such activities among students from dissimilar SES groups, in addition to the implications for their academic performance. The policy context of the selected activity categories is also discussed.

2.5.2 Social-Group OSA

Definition of Social-Group OSA

There is considerable diversity among the various terms used in the academic milieu and by policy-makers with reference to activities that children participate in during their after-school time. Nevertheless, most of these terms share key similarities: they relate to institutionalised out-of-

school time characterised by "adult-organised and supervised" activities that take place outside the home environment (Adler & Adler, 1994, p. 315).

Perhaps even more importantly, however, is that these activities take place in a peer group of children relatively close in age, usually in the form of out-of-school clubs or classes. As Barker et al. (2003), who explored children's and parents' perceptions of out-of-school, clubs observed:

> [out-of-school care] provides an opportunity for children to take part in group activities. Many children commented that outside of school, there were few other opportunities for children to come together and play in groups. Some children did not have friends or neighbours of a similar age to play with at home, or were unable to meet up with them (p. 27).

This means that, besides offering specific content such as sport, homework support, music, art or even simply free-play, participation in organised out-of-school group activities presents the child with a social setting within which he or she acts. Herein, therefore, these activities will be categorised as social-group OSA.

A review of scholarly and policy literature shows that social-group OSA can be broadly distinguished by the degree to which they are oriented either towards fostering academic performance in students, towards other skill-building activities such as sport or music, or towards providing childcare settings and a space for free-play and relaxation.

In the US, for instance, much of the literature on "out-of-school time programmes", "after-school programmes", or "complementary learning", refers to group OSA aimed at improving the learning and developmental outputs of school-age students, and reducing the achievement gap among

children and youth from different population groups (HFRP, 2008b; Noam & Tillinger, 2004; Weiss, Little, Bouffard, & Deschenes, 2009). Similarly, in the UK, the works of Power et al. (2009) and Taylor et al. (2010), who introduced the terms "out-of-school learning" and "out-of-classroom learning", refer to social-group OSA as a tool for promoting better academic attainment of students, especially in lower-SES groups and deprived areas.

A different (mainly UK) approach uses the terms "out-of-school clubs" and "out-of-school care", with reference to various social-group OSA for children of ages from birth to adolescence. In relation to school-age children, these terms will often refer to a variety of childcare arrangements, including breakfast clubs, weekday after-school clubs or holiday schemes. Such settings are designed to allow parents to work, study or simply take a break, as indicated by the following excerpts:

> … within the UK there is a general consensus that OSC [out-of-school care] provides a safe place for children to be cared for whilst their parents work or train (Scottish Executive, 2003, p. 2).

But besides providing parents with childcare services, from policy documents it is evident that, in the UK, social-group OSA are situated in the context of offering children a safe and stimulating environment in which they can play, socialise and relax. This approach is illustrated in the following example:

> … the activities provided by staff will allow the children and young people to enjoy both organised and free play and

> leisure and recreation, including quiet times (Scottish Government, 2009, p. 17).

However, in the case of British after-school club, there is also emphasis on providing children with the opportunity for "experiential learning", such as that which occurs while they are engaged in various play and recreation activities (Smith & Barker, 1999a, p. 10). Homework preparation, on the other hand, is not seen as a task falling within the remit of the after-school club; but typically there is a quiet space for children who wish to engage with their school assignments while on the premises (Smith and Barker, 1999a, 1999b).

While classifying a particular social-group OSA according to its key purpose and determining whether it includes a direct study-support element is not necessarily a simple task, there is clearly a difference across the variety of activities in their emphasis on promoting academic outputs in children. Since this research is interested in children's leisure activities, and given the little available data on study-support programmes, the present study will focus on social-group OSA which are not specifically aimed at promoting children's academic attainment. In particular, the study will examine school-age children's participation in: weekday after-school clubs; out-of-school sport and physical activity (PA) clubs/classes (offering activities like judo, football, swimming etc.); and enrichment clubs/classes (offering activities like drama, music, arts etc).

Building on the above discussion, as well as on research (i.e., Berhau et al., 2011; Crozier et al., 2008; Lareau & Cox, 2011; Vincent & Ball, 2007; Vincent et al., 2013), and on Bourdieu's traditional criteria for distinguishing between highbrow and lowbrow cultural forms, the present study adopts a

perspective that attendance at PA and enrichment clubs is a proxy of engagement in more highbrow activities than participation in after-school clubs.

Situating Social-Group OSA within a UK Policy Context

Policy-makers in the UK have stated that children and adolescents from all backgrounds have the right, and should be allowed, to spend a significant portion of their out-of-school time engaged in play and leisure activities (Gleave & Cole-Hamilton, 2012; Gleave, 2009; Santer, Griffith, & Goodall, 2007; Scottish Executive, 2003). As Hirsch, Sutton and Beckhelling (2012) have recently noted:

> There is broad consensus that children's needs today comprise not just an adequate diet and the physical necessities of life, but also the ability to participate in society – for example, by going to birthday parties, taking part in after-school activities and having a modest annual holiday with their families (p. 7).

A review of works published by advocates of play and recreation demonstrates a perception that engagement in such activities, whether during or outside school hours, has a positive contribution to children's physical, emotional, social and cognitive development (British Government, 1998; Cole-Hamilton, 2012; Gleave, 2009; Santer et al., 2007; Scottish Executive, 2003).

For example, the Scottish "Framework for the Development of Out-of-School Care" mentions that:

> … Play is an essential part of OSC. Active play has clear health benefits and it also helps with physical and emotional development (Scottish Executive, 2003, pp. 94–95).

Only minor concerns have been raised as to whether children's and adolescents' free time might become "over-scheduled", occupied with an excessive volume of adult-organised, adult-supervised or commercialised activities (Fredricks, 2012; Gleave, 2009).

Researchers agree that, as of the early 1990s, the British government (and the devolved Scottish parliament) have shown an increasing interest in the provision of out-of-school care and education services (Cunningham-Burley, Carty, Martin, & Birch, 2005; Fordham, 2004; Mayall & Hood, 2001; Penn & Randall, 2005; Scottish Government, 2009; Wincott, 2006; Winter, 2008). During the New Labour administration (1997-2010), a series of policies and legislative enactments were initiated that resulted in a substantial expansion of childcare services such as nurseries, family centres and playgroups (British Government, 2003, 2005, 2006; Fordham, 2004).

Apart from the rise in childcare services for pre-schoolers, the provision of after-school clubs across the UK underwent significant growth (Kinnaird, 2006; Scottish Executive, 2003; Scottish Government, 2007; Smith & Barker, 1999a). The governmental investment in out-of-school care arrangements, including after-school clubs, was underpinned by two main incentives. The first was to enhance maternal uptake of training and employment rates as well as the number of hours worked by mothers of

young children (British Government, 2005). In this context, a particular emphasis has been placed on supporting the employability of single-mothers, who were considered to be among the main beneficiaries of the growing pre-school and after-school childcare market (British Government, 1998; Scottish Executive, 2003).

The second incentive to development of a widespread childcare system was the wish to enable children from vulnerable backgrounds, characterised by poverty and deprivation, to experience "the best start in life" (British Government, 1998, p. 5, 2005, p. 9; Scottish Executive, 2003, pp. 90–91). The idea behind the "best start in life" philosophy was to provide those growing up in low-SES groups and other at-risk circumstances with quality care and educational opportunities that allowed their social, emotional and academic potential to be promoted (Blair, 1997, 2005; Malcolm et al., 2002; Penn, 2007; Scottish Executive, 2003).

A concomitant policy focus enacted through the expansion of out-of-school provision was on increasing the level of children's participation in PA. This commitment was demonstrated by vast investment in widening the supply and variety of out-of-school opportunities for sport and PA (DCMS, 1999, 2001; Liu, 2008; Lowden, Garside, & Hall, 2005; Lowden, Garside, & Hamilton, 2005; Scottish Executive, 2003; SportScotland, 2005; Waring & Mason, 2010), through initiatives such as the "National Strategy for Physical Education, School Sport and Club Links" in England (DfES, 2005) and the Scottish "active schools network" framework (SportScotland, 2007a). More recently, the Coalition Government announced that a new stream of finance will be transferred to primary schools in the academic years 2013/14 and

2014/15 towards increasing the provision of sport and PA during and outwith the regular school hours (British Government, 2013, p. 39).

A review of official government literature and related research indicates a perception that the potential benefits of PA programmes are manifold: reducing the growing incidence of obesity; combatting the health risks associated with physical inactivity; and promoting positive psycho-social and cognitive development among children and adolescents (DCMS, 2001; Feinstein et al., 2006; OFSTED, 2005; Scottish Executive, 2003; SportScotland, 2005; Voss, Hosking, Metcalf, Jeffery, & Wilkin, 2008). An additional justification for the governmental investment in these programmes demonstrates a commitment to promoting greater social inclusion and a notion that the integration of excluded minorities and disadvantaged groups into community life can be achieved through participation in sport and PA (DCMS, 1999, 2003; Gordon et al., 2000; Liu, 2008; SportScotland, 2005; Waring & Mason, 2010).

But, while the provision of after-school clubs and PA opportunities received unprecedented policy attention and substantial targeted investment, less consideration has been given to out-of-school enrichment activities such as music, arts or sciences. Only limited discussion has been offered as to the effects of enrichment clubs on children's well-being and social inclusion. This disparity in the scope of research and policy interest has been noted by Hughes (2009), who commented that "some areas of out-of-school life are relatively neglected" (p. 18).

Nevertheless, there is a small number of policy documents in which the importance of non-sport arrangements in and outside schools for children's development is highlighted. The "out-of-school-hours learning

framework" (Fordham, 2004), for example, drew attention to the relevance of engagement in non-sport enrichment activities for children's performance at school, pointing to "creative ventures [like] music, drama, dance, film, and the full range of arts" (ibid., p. 53) as opportunities for each child to develop his or her own interests. More recently, the DCMS (2010) has launched an initiative aimed at providing school-age children from all SES groups with a range of high-quality cultural activities such as drama and music, both in and outside the schools. The DCMS's motives for encouraging the uptake of cultural activities by children included the wish to promote students' social skills and sense of personal fulfilment, as well as to achieve greater inclusion of at-risk children in society (DCMS, 2010).

Clearly, vast investment has been directed in the past two decades towards increasing children's participation in social-group OSA of various types. However, it is not clear to what extent government pledges to reduce barriers to participation and increase the uptake of such activities among children of low-SES groups has borne fruit. The next section introduces evidence from studies into attendance at social-group OSA among school-age students from dissimilar SES groups in the UK and abroad.

Participation in Social-Group OSA among Students from Dissimilar SES Groups

In the US, ample research demonstrates that children and adolescents are more likely to participate in various social-group OSA if they belong to economically well-off families or grow up with highly-qualified parents or parents with high occupational status, than if they live in less well-off homes or are brought up by poorly-qualified or working-class

parents (Covay & Carbonaro, 2010; Eccles & Appleton-Gootman, 2002; Lareau & Weininger, 2008; Pettit, Laird, Bates, & Dodge, 1997; Vandell & Shumow, 1999). This holds true even for after-school programmes targeted specifically at children from low-income families and offered free of charge (Earle, 2009; James-Burdumy et al., 2005; Miller, 2010). There is also evidence that US schools catering for more economically well-off students offer a greater number and wider variety of social-group OSA than schools with higher rates of student poverty (Stearns & Glennie, 2010).

In relation to PA programmes, similar trends were found. For instance, Covay and Carbonaro (2010) showed that the percentage of 3rd-graders participating in organised out-of-school sport programmes in the US increases with the level of household income, parental education, and social-class. Similarly, for adolescents, a positive association between SES and participation in organised PA was found in a study of high-school students in the US (Walters et al., 2009) in Canada (Humbert et al., 2006), and in Australia (Blomfield & Barber, 2011).

There is little empirical evidence on British school-age students' participation in social-group OSA. Feinstein et al. (2006), who analysed data from the BCS70, found that adolescents from high-SES groups, compared to counterparts from low-SES families, were more likely to attend uniformed organisations like scouts and guides as well as church clubs, and less likely to participate in youth clubs. The same study found no association between SES and attendance at organised sports or community centres (Feinstein et al. ,2006).

Morrow (1999b), who investigated adolescents in one English comprehensive school located in a relatively deprived area, reported that the

lack of either sufficient non-paid-for activities or activities not requiring usage of facilities like football courts hindered students' participation in formal community-organised activities and left them with very little to do outside the school day.

Muschamp et al. (2009), concluded, on the basis of analysis of interviews with 55 English students aged around 10 and 13, that those who were not eligible for free school meals experienced a wider range of social-group OSA than their free school meals-eligible peers, and that the latter children relied more heavily on services offered by the schools as a source of such activities.

Voss et al. (2008), who explored participation in out-of-school PA among 214 children aged 7-8 years, found that, although children from low-income families were just as active as their better-off peers, they were less likely to be involved in organised PA. Also, Fraser and Ziff (2009) showed that, compared to their low-SES peers, higher-SES English children aged 5-16 years were represented in greater numbers among those who participated in at least three hours of out-of-school organised PA.

So, international and UK evidence reveals socio-economic inequality in participation in social-group OSA. Studies show that the costs associated with participation in social-group OSA are among the main reasons why children refrained from attending such activities (Earle, 2009; Larner et al., 1999; Parsad, Lewis, & Tice, 2009). For example, in the US, Larner et al. (1999) noted that accessibility and enrolment fees were pointed to by US parents as key factors in their children's non-attendance at organised OSA. Larner et al. (1999) argued that costs of OSA impose "a stiff burden on families with limited income or several children" (p. 6). This finding is echoed in a study

by Earle (2009), who reported that the costs involved in participation in after-school programmes, as well as transportation fees to and from the activities' locations, hinder children's attendance at such programmes. In yet another study from the US, parents from minority groups and those with low incomes stated, in higher percentages than white and high-income earners, that it was difficult for them to find suitable and affordable after-school programmes for their children (Duffett & Johnson, 2004).

British research on the impact of after-school club costs on usage rates among parents with different SES is limited in scope. Nevertheless, a qualitative study that investigated participation in organised out-of-school activities has demonstrated that the cost and availability of transport was a key barrier to participation, especially among children eligible for free school meals (Muschamp et al., 2009).

Gatenby (1998), who evaluated the viability of 103 out-of-school provisions for school-aged children, indicated that the probability of a club retaining its viability was higher in localities in which families had fewer economic constraints. This suggests that there is a link between how well-off families are and their ability and willingness to pay the costs associated with out-of-school clubs.

In a more recent survey, 25% of parents in England reported that it was difficult or very difficult for them to pay for childcare, including after-school clubs (Smith et al., 2012, pp. 99–100). Also, families with low annual incomes, and single mothers, were more likely than those with high incomes, or partnered mothers, to experience such difficulties (ibid., p. 100).

However, financial constraints may not be the only reason why school-age children from low-SES families refrain from attending social-

group OSA. Based on interviews with British adolescents from both low- and high-income families, Wikeley et al. (2007) reported that, other than client-end costs, key barriers to participation in social-group OSA included "limited knowledge about how to realise access or confidence in doing so; and perceptions of self as an attendee of such activities" (p. 32). As Reay (2004b, p. 82) noted, working-class students who were enrolled into "Gifted and Talented" Programmes felt "awkward and out of place", and commented that they had no friends there and struggled to complete the programme.

In conclusion: studies from abroad present compelling evidence of socio-economic stratification in attendance at leisure social-group OSA. However, in the UK there is little parallel research on the links between SES and participation in such activities, namely out-of-school clubs and classes, among school-age children. This shortage will be addressed by the present research.

Before continuing to review inequalities in attendance at other types of OSA, the next section discusses the question of whether participation in social-group OSA is related to academic performance of school-age students.

The Links between Participation in Social-Group OSA and Academic Outcomes

There is a large scope of US research into the links between participation in social-group OSA and the academic outcomes of school-age students. Several extant studies in this field detected no statistically significant effects or even negative associations between participation in

social-group OSA and children's academic performance (James-Burdumy et al., 2005; Pettit et al., 1997; Vandell & Corasaniti, 1988).

James-Burdumy et al. (2005) conducted a two-year large-scale intervention study to explore the impacts of attendance at a particular after-school learning programme, offering a mixture of study-support and enrichment-leisure activities (such as art, drama, or music) on the academic and behavioural outputs of elementary students. The "treatment group" consisted of children who volunteered to attend the programme under investigation, while the "control" group included same-age children who were not assigned to that programme. The researchers found no differences in the scores of participants in the treatment group and those from the control group on a variety of outcomes including reading, math, science, social studies, and English. One possible explanation for that finding is that, without the researchers realising it, a large number of members of the control group attended other after-school schemes with characteristics similar to those of the examined programme.

Vandell and Corasaniti (1988) showed that attendance at after-school daycare, compared to self-care or home-care by parents or relatives during the afternoon, was related to third-graders' lower academic performance and poorer scores on a teacher-based peer-relation index. Pettit et al. (1997) found that, although first-graders who experienced many hours of home-care were rated as less well adjusted to the school environment when they reached the sixth grade, the associations were not significant for all types of social-group OSA. The researchers suggested that structured adult-supervised enrichment programmes might be related to developmental gains in children, while

programmes with no such characteristics have no positive impact on children's outcomes.

The majority of US studies, however, demonstrate positive impacts of attendance at social-group OSA that offer either a combination of academic support, recreation, arts and other enrichment activities, or uni-focused leisure programmes, on the outputs of attendees relative to the outputs of their non-participant peers.

For instance, researchers found a negative correlation between participation in social-group OSA and behavioural problems at school, absenteeism rates and the number of suspensions from school (Espino et al., 2004; Halpern, 1999; Huang, Kim, Marshall, & Pérez, 2005; Larner et al., 1999; Vandell et al., 2007; Vandell & Shumow, 1999).

Positive associations were found between attendance at social-group OSA and students' efforts to succeed in class, as reported by their teachers (James-Burdumy et al., 2005), attitudes towards learning (Covay & Carbonaro, 2010), attitudes towards school (Dotterer, McHale, & Crouter, 2007), and aspirations to proceed to tertiary education (Huang et al., 2007).

In addition, several studies demonstrated a positive association between participation in such OSA and students' reading and math scores (Covay & Carbonaro, 2010; Huang, Gribbons, Sung-Kim, Lee & Baker, 2000; Vandell et al., 2007). Likewise, Springer and Diffil (2012) found a positive association between the frequency of participation in social-group OSA and students' grade point averages (GPA); the greater the number of hours students spent in such activities, the larger was their GPA growth. The same study found, however, that the breadth of activities students attended – that

is, whether they were involved in a narrow or wide range of different activities – was not associated with their GPA.

While mounting evidence from the US has shown that participation in social-group OSA is associated with a range of positive academic outcomes, little parallel research has been conducted (or published) in the UK. An exception is a longitudinal study by Feinstein et al. (2006) which explored BCS70 students' participation in a range of social-group OSA at age 16 in relation to social exclusion indicators at age 30. This study found that attendance at sports clubs and church centres was associated with better educational attainment than non-attendance at such activities. By contrast, participation in youth clubs was linked to poorer educational outcomes at age 30, and no significant association was found between such outcomes and attendance at community centres at age 16. The results of Feinstein and his colleagues were significant accounting for SES.

Also, Wikeley et al., (2007), based on in-depth interviews of 55 English students aged 10-13, argued that the more equal relationships that students and staff construct in social-group OSA, and the opportunity to engage in non-formal learning in these settings, have positive impacts on how participants perceive their own skills and how confident they feel in regard to learning.

Clearly, however, there is a need for further investigation of the links between attendance at social-group OSA and academic performance and development of British school-age children.

Social-group OSA in the UK - Summary

The above review of empirical findings supports the idea that participation in different social-group OSA, including after-school clubs, PA and enrichment clubs, and other forms of organised OSA that take place in a peer group of children relatively close in age, is linked to students' academic outcomes, after controlling for SES and other background measures.

I also show associations between students' likelihood of participation in such activities and their SES, suggesting that children and adolescents with parents who are either more highly educated, or in higher-status jobs, or who have higher levels of income, are more likely than less socio-economically advantaged counterparts to participate in social-group OSA.

Following governmental investment in childcare provision across the UK, there has been extensive research into the links between childcare social-group settings such as nurseries and playgroups and the cognitive development of British children under the age of 5 as well as their "readiness for school" at transition to primary school (Bradshaw & Wasoff, 2009; Hansen & Hawkes, 2009; Mathers et al., 2007; Sammons et al., 2004). Yet, there has been very little research on participation in organised social-group OSA and the academic performance of school-age students across the SES levels. This is the case even though policy documents show great interest in reducing the inequalities between children in low- and high-SES groups, by, among other things, breaking down barriers to participation in high-quality social-group OSA (British Government, 2003; Scottish Executive, 2003).

Due to this shortage of knowledge, it is difficult to propose how participation in social-group OSA might contribute to the development, maintenance or perhaps reduction in the socio-economic gap in British children's academic achievements during the primary school years.

The current study will address this knowledge deficit by exploring participation in social-group OSA such as weekday out-of-school clubs and classes, and the implications for the academic outcomes of school-age children in dissimilar SES groups.

2.5.3 Commercial-Public OSA

Definition of Commercial-Public OSA

An additional leisure domain in which school-age children engage in their free time is that of commercial-public OSA, that is, leisure activities of a more "commercial" nature that take place outside the home environment (Roberts, 2008; Stalker, 2011). Such activities may include attendance at "paid-for" activities (Ferragina et al., 2013, p. 29) such as: live theatrical and musical performances; spectatorship of professional sport events; visits to the cinema, visits to museums and art galleries; attendance at theme-parks and funfairs; visits to zoological and historical sites; and other recreational venues.

Unlike participation in social-group OSA, which normally takes place with peers relatively close in age, attendance at commercial-public OSA, in middle childhood, would typically involve the company of family members or selected friends or neighbours.

Given my motivation to explore children's participation in commercial-public OSA which broadly represent different points on the highbrow-lowbrow dichotomy, the following activities will be explored in the present study: attendance at art venues; visits to the cinema; spectatorship of professional sporting events; and visits to theme-parks and funfairs. Building on prior research discussed earlier, attendance at art venues (including museums and art galleries) will be used to gauge children's participation in highbrow activities. In comparison, visits to cinemas and spectatorship of professional sporting events will be regarded as midbrow activities, and going to theme-parks and funfairs as an indication of participation in lowbrow activity.

Situating Commercial-Public OSA within a UK Policy Context

Compared to the extensive policy attention social-group OSA have received in the past two decades, there is a paucity of literature concerning socio-economic stratification in British school-age children's attendance at commercial-public OSA, and the implications for their development.

Nevertheless, some policy documents demonstrate a perception that children's exposure to commercial-public leisure activities is an important factor in their healthy development and that hence children should not be deprived of opportunities to experience such activities both within and outside the school environment.

For instance, more than a decade ago, the "Group of Large Local Authority Museums" report acknowledged the important role of museums and galleries in achieving greater social inclusion in the UK (GLLAM, 2000).

However, the same document also noted that, while stakeholders like museum directors and local authorities "made many powerful statements which affirmed their commitment to social inclusion work" as well as showing motivation "to be playing a key role in society" (ibid., p. 13), there is little evidence that they have been in "the forefront of social inclusion work …" (ibid., p. 4). And so, even though a "museums for all" (ibid., p. 23) philosophy has been widely adopted by those stakeholders, few measures were taken to identify and break down barriers to attendance at such venues, especially among particular population groups.

Motivation to increase the rate of attendees at commercialised-public leisure activities such as theatre performances and music concerts is evident in a survey from Scotland which addresses children's engagement in leisure activities in and outside the school (Chamberlain, Sewel, & Braunholtz, 2008). This report noted:

> … the Scottish Government's Manifesto committed to widening access to culture, because of the benefits that participation in culture can bring to the individual… (p. 8).

But despite these examples, there is neither a good deal of research about UK school-age children's participation in commercial-public OSA, nor a sufficient scope of literature that explores the links between British children's exposure to commercial-public OSA and their academic performance.

Participation in Commercial-Public OSA among Students in Dissimilar SES Groups

As has already been noted, little theoretical and empirical attention has been given to the exploration of young children's participation in commercial-public OSA and the possible implications for their development. This shortage is particularly interesting given that the socio-economic context of adult and adolescent participation in such activities, both in the UK and internationally, and the implications of participation in such activities for social stratification, have been widely studied during the past decade (Chan & Goldthorpe, 2005, 2007a, 2007b; Feinstein, Bynner, & Duckworth, 2006; Gayo-Cal, Savage, & Warde, 2006; Gronow & Southerton, 2010; Le-Roux, Rouanet, Savage, & Warde, 2008; Lopez-Sintas & Garcia-Alvarez, 2006; Roberts, 2008; Scherger & Savage, 2010). This is the case even though, as noted by Turley (2001), children may very well act as a "catalyst in generating a family visit (repeat or first-time) to an attraction …" (p. 2).

Some studies, however, have sought to determine whether exposure to commercial-public OSA differs by students' socio-economic background. Becker (2010), who explored German pre-schoolers' attendance at such activities, found that middle-class children attended a greater number of activities such as visits to a museum, zoo, circus, library, or theatre, compared to their working-class counterparts.

Similarly, by analysing GUS data, Bromley (2009) showed that pre-schoolers' likelihood of attending none or only one type of activity in the commercial-public leisure category increased if they were living in communities in the most deprived 15% of areas, or if they had a poorly-qualified mother or parent not in paid work. An analysis of data from a Scottish school-omnibus survey showed that, among students aged 11 to 15 years, those who live with two working parents are more likely to attend the

cinema than counterparts who live with two unemployed parents (Chamberlain et al., 2008).

A similar trend showing positive associations between the chances of attending the cinema and parental work status has been demonstrated for English children aged 5-10 years, using data from the "Taking Part Survey" (TPS) (Jones, Knight, Buraimo, & Lancashire, 2011). Also, using MCS data, Ferragina et al. (2013) constructed a scale capturing 7-year-olds' attendance at "paid-for" activities, including visits to live concerts, art galleries, zoos, theme-parks, cinemas and sporting events. They demonstrated a positive association between this scale and income and parental education, meaning that the number of activities children attended increased with these SES factors. Ferragina and his colleagues also reported negative associations between the number of activities attended and parental working hours and the number of siblings in the household.

Using data collected from 450 English adolescents studying in comprehensive schools, Sullivan (2003) showed that participation in commercial-public OSA at age 16 is linked to pupils' socio-economic background. In particular, having parents who are either more highly educated or in higher-status jobs was positively associated with attendance at highbrow commercial-public OSA, including visits to museums, galleries, plays and classical concerts. Interestingly, though, once parents' own participation in similar activities was accounted for, the association between pupils' SES and their participation became non-significant, a finding suggestive of a strong mediating effect of parental participation on the link between SES factors and adolescents' participation in such activities beyond the school gates.

Bromley (2009) found, using GUS data, that at 22 months, toddlers who visited a wide range of events/places such as the cinema, art galleries, sporting events, zoos, farms or swimming pools, scored higher on standardised cognitive tests than same-age counterparts who, over the same period of time, visited only a single event/place, or none at all. This effect remained statistically significant after socio-demographic factors were introduced into the model.

In a study of English adolescents aged about 16, Sullivan (2003) showed that there was no statistically significant association between the frequency of attendance at commercial-public OSA such as visits to art venues or live shows, and pupils' vocabulary scores or GCSE attainment, after accounting for key SES factors. Conversely, the more pupils participated in such activities, the more confident they felt about their own academic skills, a finding about which Sullivan says: "Perhaps cultural participation affects pupils' self-image, giving them exaggerated confidence in their own abilities" (p. 125). In this connection, an exploratory survey carried out by the "Research Centre for Museums and Galleries" (RCMG, 2007), which focused on school visits to museums, found that English pupils who had been on such class-visits felt that the museum experience was enjoyable, contributed to their knowledge and equipped them with greater motivation to complete school tasks.

A UK study using data from the BCS70 showed that attendance at the theatre at age 16 years is associated with a higher estimated income at

age 29, but not with a better likelihood of becoming highly educated (Robson, 2009). The same study found no statistically significant links between 16 year-olds' attendance at concerts or visits to museums and the levels of income or qualifications at age 29 (ibid.).

Taken together, these studies suggest that the positive effects of participation in commercial-leisure activities on academic outcomes may be limited to particular outputs and wane with time. Nevertheless, given the small number of studies in which this issue is addressed, there is room to explore these links further.

2.5.4 Home-Centred Activities

Home-Centred Activities: Definition

A final domain in which children are likely to spend some portion of their free time engaged in leisure activities is the home environment. In that environment, children might experience a range of leisure activities, including indoor and outdoor play and games, reading for enjoyment, engaging in musical activities, doing arts and crafts, playing on the computer or watching television, practising sports, and others.

Home-centred leisure activities can take many forms, including a parent-child or family-child shared activity. Examples of such shared activities are a child playing with his or her parents and/or siblings, or a parent reading a book to the child. A different form of engagement in leisure at the home environment is a solo-child activity: for example, when a child

plays or reads a book on his or her own. In addition, these activities can vary according to the degree to which they are "structured/adult-constructed or unstructured/child-initiated" (Griffiths, 2011, p. 199).

There has recently been slow but steady growth in the number of UK-based studies which explore children's engagement in home-centred activities and the associated implications for their development in different areas of life (e.g., Bromley, 2009; Hartas, 2011, 2012; Melhuish, 2010; Siraj-Blatchford, 2010; Sylva et al., 2012).

Yet, like the previous two out-of-school leisure domains that were discussed by this review (i.e., the "social-group" and "public-commercial" categories), this field, too, is largely unexplored. Moreover, extant studies into home-centred activities suffer several limitations.

For instance, much of the research to date has focused on engagement in home-centred activities among children under the age of 5 and on their academic performance prior to or during the transition to primary school. The number of studies looking into engagement of school-age children in such activities is small.

In addition, recent research in this field has used the overarching term "home learning environment" (HLE) (Bromley, 2009; Melhuish, 2010; Sylva et al., 2012) to develop an index, comprising both leisure or play activities and more academically-oriented activities, with which to explore the associations between different home environments and academic performance. Such an approach does not allow the researcher to fully identify the possible differential implications of diverse home-centred activities for children's academic performance.

It appears that the dominant approach currently held by scholars in this field focuses on the importance of activities with an embedded academic component, such as reading and playing educational games. Consequently the possible developmental effects of engagement in leisure activities that are only loosely, if at all, associated with educational aims, such as free play, painting or drawing, remain relatively neglected. Yet such activities, too, may benefit the academic outcomes of children. For example, playing indoor games with older siblings or with the parents might stimulate the cognitive development of children as well as contributing to their vocabulary.

In response to this shortage, the current study intends to explore the following home-centred leisure activities in relation to SES and academic outcomes: shared-reading; shared creative activities; joint indoor play; and child's electronic media usage. Again, these activities were chosen to allow investigation of home-centred activities broadly associated with a range of cultural capital levels, with shared-reading and media usage signifying the highbrow and lowbrow extremes, correspondingly.

Situating Home-Centred Activities within a UK Policy Context

What parents and their children do in the home environment, for recreation in leisure time, may be considered a private matter, not falling within the remit of the state. Nevertheless, concerns over the well-being of children who struggle to achieve developmental milestones have led the British government to introduce family learning programmes aimed at equipping parents with a stronger, more effective parenting tool-kit (i.e., Big Lottery Fund, 2006; British Government, 2012; Estyn, 2012; Gillies &

Edwards, 2006; Grimshaw & McGuire, 1998; Lamb, Fairfax-Cholmeley, & Evans, 2009; Lindsay, Strand, & Davis, 2011; Ranson & Rutledge, 2005; Scott, Connor, & Futh, 2006).

Policy documents such as the 2003 "every child matters" green paper show that, since its election in 1997, the New Labour Government has put parents and children high on its agenda (British Government, 2003). Besides investing heavily in non-parental childcare arrangements, this government pledged to aid parents in supporting their children's development:

> We need to pay more attention to the critical relationships between children and their families and provide them with better support (British Government, 2003, p. 20).

To this end, a wide range of family learning programmes were created, targeted particularly at families in deprived areas and parents of academically under-achieving children or children who display substantial behavioural difficulties (Lindsay et al., 2011; Ranson & Rutledge, 2005; Scott et al., 2006). These programmes are underpinned by the notion that parents are children's primary educators, so that deficit in the volume and range of stimuli and support parents provide their children with may very well lead to the development of academic, emotional and behavioural difficulties in children. This is why encouraging parents to engage with their children more actively and effectively should safeguard children from experiencing such developmental problems and aid those who already demonstrate difficulties.

Among other outputs, the expected outcomes of these programmes include: greater parental understanding of how children develop and learn (Big Lottery Fund, 2006); better literacy and numeracy skills in children and

adults; increased parental confidence and ability to aid their children with literacy and numeracy tasks (Estyn, 2012); extended engagement in activities together as a family; higher use of the home as a learning environment; stronger family bonds and more effective communication within the family (Lamb et al., 2009; Ranson & Rutledge, 2005).

The programmes, which typically range from single-day workshops to few-days courses, take place in a group setting and comprise parents' learning time as well as parent-child shared activities. Modes of delivery vary, but are guided by a principle of introducing learning content through enjoyable experiences and learning though play (Big Lottery Fund, 2006; Ranson & Rutledge, 2005). Examples include computer-based activities, craft classes, cookery and healthy eating classes, and visits to venues such as museums, art galleries, libraries and other public spaces (Estyn, 2012; Lindsay et al., 2011).

The above review demonstrates that, during the past decade in the UK, a notable volume of programmes were created, offering parents with training on how to best address their children's various developmental needs, and in turn, improve the children's academic performance and prevent the emergence of behavioural difficulties. Among other things, these programmes sought to guide parents on how to make better use of the home environment for stimulating children's development, by methods including play and other shared activities.

UK and international research indicates that the volume and types of home-centred activities children experience differ according to SES (e.g., Bianchi & Robinson, 1997; Bodovski & Farkas, 2008; Bromley, 2009; Craig & Mullan, 2012; Ferragina et al., 2013; Goodman et al., 2010; Hartas, 2012; Hofferth & Sandberg, 2001; Vandermaas-Peeler, Nelson, Bumpass, & Sassine, 2009).

In the US, Bodovski and Farkas (2008) constructed a scale using data on the frequency with which parents tell stories or read to their child; sing songs, do art, build blocks, or play games with the child; teach the child about nature, practise numbers/letters and help with homework; and do sports with the child. They showed that elementary school students from higher-SES groups, compared to peers belonging to lower-SES groups, were more likely to experience a greater number of home-centred activities.

Bianchi and Robinson (1997), who analysed time-use patterns using representative data of children aged 3-11 in California, showed that those living with mothers who were educated to university degree level, or in homes with high incomes, spent more time reading or being read to than peers living with mothers having lower educational qualifications, or in households with lower incomes. A reverse trend was found in relation to the time children spent watching television: the number of hours a day children watched TV decreased with mothers' education and familial income levels. In addition, the researchers reported that family size and parenting composition were not significantly associated with the amount of time children spent in these activities. Similar results were reported by Hofferth

and Sandberg (2001), who analysed data from time-use diaries of 13-year-olds in the US: time spent watching TV declined with income while reading for enjoyment increased with familial income. In this study, no income differences were found in the time students spent in free play in the home environment.

Vandermaas-Peeler et al. (2009) explored the engagement of American children aged about 5 years in two types of home-centred activities, namely storybook reading and free play. Based on analysis of video records of 37 parent–child dyads, the researchers reported that, in some instances, parental behaviours during the two examined activities differed by SES. For example, during storybook reading, parents with high SES praised their children more than parents with low SES and also exhibited more extensive and elaborated teaching sequences stimulated by the story. No similar associations were found in relation to play; however, higher-SES parents tended to offer their children suggestions of a more open-ended nature, while low-SES parents tended to give instruction-like suggestions. In addition, after engaging in the examined activities, both parents and children from lower-SES families reported lower levels of enjoyment than higher-SES dyads.

In the UK, Bromley (2009) found that higher-SES parents of 10-month-old babies in the GUS survey were more likely to play educational games such as recognising shapes, numbers or letters with their child than lower-SES counterparts. Analysis of MCS data by Hartas (2011) revealed that highly educated mothers and those who were not in poverty read to their 5-year olds, engaged in shared musical activities and helped with their homework in greater numbers than mothers with lower qualifications, or

living in households where the income fell below 60% of the national median. Nevertheless, the differences were modest in size. In addition, no associations were found between SES and the frequency with which mothers helped their children with writing, at age 5.

Still in relation to data taken from the MCS, Ferragina et al. (2013) documented a modest positive association between the frequency of engagement in home-centred play activities among 7-year-olds, as measured by a scale comprised of parent-child joint reading, musical and creative activities, and family income and parental education. This scale also was found to have a positive link with the number of siblings as well as with being raised in a co-parent household.

An international comparison of children's and mothers' time-use in the USA, Australia, Denmark and France found that, in all four countries, children with highly educated mothers spent more time engaged in home-centred activities that did not involve media usage than children of less well-educated mothers (Craig & Mullan, 2012).

Overall, the findings reported here indicate that there is a connection between SES and children's engagement in home-centred activities. Children in higher-SES groups engage in more activities and for longer hours. These activities include parent-child joint reading, music, and creative activities among other pursuits. Yet, as the evidence shows, some activities, in particular television watching, appear to be negatively linked to SES.

There is mixed evidence as to the links between home-centred leisure activities and the acquisition of academic skills in the childhood years. Some studies report positive effects of engagement in such activities on academic outcomes while others show very slight associations or none at all. Even more common in this vein of research are studies in which some activities are found to be linked to academic outcomes while others are not.

Bodovski and Farkas (2008) showed that US first-graders' reading scores and approach to learning were positively associated with the number of home-centred activities the children experienced as well as with the number of books at home, after controlling for parents' SES. In contrast, there were no significant associations between the level of engagement in home-centred activities and teachers' rating of the students' academic ability.

Bromley (2009) found, using GUS survey data, that the frequency with which Scottish parents read to their 10-month-old babies, or played educational games such as recognising shapes, numbers or letters with the child when he or she was 22 months old, was positively associated with both verbal and non-verbal standardised test scores.

Several analyses of data taken from the MCS also demonstrate associations between engagement in activities in the home environment and children's cognitive development. For example, a study by Hansen and Jones (2010) showed that, in England, 3-year-old cohort members who were read to on a daily basis and were taught the alphabet frequently, achieved higher scores in a variety of standardised cognitive tests when they entered primary school, compared to children who were provided with fewer of these

activities. Becker (2011) replicated this finding by showing that more frequent reading to three-year-old MCS children was associated with a higher vocabulary gain score at age 5, and that this result was significant even when key socio-economic factors, as well as the type of pre-school arrangement children experienced, were taken into account.

Similarly, Kelly et al. (2011) found positive associations between the cohort members' standardised test-scores at both age 3 and 5, and their score on a home-learning activities scale, after controlling for the family's income. This scale used by Kelly et al. added up the levels of engagement in activities such as parent-child shared reading and creative activities as well as visits to the library, help with the alphabet, help with numbers/counting, learning songs/rhymes (at age 3), and equivalent data from the age 5 sweep.

Hartas (2011) found that, among 5-year old children in the MCS, those who were read to more frequently obtained better scores on their FSP teacher's assessment. No interaction effects were found between maternal educational level or whether the cohort member lives in poverty, and how frequently mothers read to their child, on the FSP assessment. This suggests that the positive effect of maternal engagement in reading is equal in magnitude for children across the SES levels. Also, the age 5 assessment scores of children did not differ significanly by whether, at age 3, they experienced a high or low volume of parent-child shared activities such as singing songs/rhymes, telling stories and playing music.

Goodman et al. (2010), who analysed the MCS among other datasets, showed that children who were exposed to a greater volume of activities in the home environment, that is, had a higher score on the home-learning-environment index, obtained better scores in cognitive tests at age 3, but not

at age 5. In addition, Hartas (2012) showed that there is no significant association between the frequency with which mothers helped their 7-year-olds with reading and homework and their MCS teacher's assessment in speaking, listening, reading and writing.

Sylva et al. (2012) found, by analysing data from the EPPSE (3-14) project in England, that, after controlling for key socio-economic factors and students' prior skills, a "rich" home-learning environment in the preschool years, but less so in the primary-school years, is positively associated with 14-year-olds' "enjoyment of school, self-reported 'popularity' and English academic self concept" (p. ii). One possible explanation for the greater effect of early-years HLE than middle-childhood HLE on key stage 3 outcomes lies in differences in the components of the two indexes, resulting in the former index being more closely linked with academic factors than the latter (see Sylva et al., p. 167). Such differences can also explain why, in the MCS, engagement in home activities at the pre-school stage was found to be linked to better academic performance at age 3, whereas there were mixed results in relation to age 5 and 7 scores, even when home activities were measured at a date near to the time when cohort members were tested.

Sammons et al. (2004), who analysed data from the UK's EPPE pre-school study, found a positive association between a variety of parent-child shared home-centred activities during pre-school years and children's scores on a range of cognitive tests in the transition to reception class. For example, the frequency with which parents reported having informally taught the alphabet to the child (by looking at books, magazines, signs etc.), or taught the child songs and nursery rhymes, was positively associated with children's scores on language, pre-reading and early number concept tests,

compared to peers who did not receive a similar volume of guidance from their parents. Spontaneous play with friends, by contrast, was negatively associated with the same test scores (ibid.).

Sullivan (2003) showed that there is a positive statistically significant association between English secondary school pupils' reading habits outside school hours and their vocabulary scores, cultural knowledge and GCSE attainment. Also, pupils who watched "relatively sophisticated programmes on TV" (p. 94), scored better on these tests than counterparts who watched less sophisticated programmes.[1] By contrast, no significant associations were found between listening to classical music and/or playing a musical instrument and vocabulary scores or cultural knowledge.

A comparison between adolescents in the US and in South Korea found, using TIMSS data, that in both countries the time spent watching TV as well as playing computer games or using the internet at home was greater among the high-achievers group compared to the low-achievers group (Won & Han, 2010). At the same time, high-achieving students spent more time reading books than their counterparts in the low-achievers group (ibid.).

Home-Centred Activities – Summary

In conclusion: a review of studies exploring students' engagement in home- centred activities reveals that those living in better socio-economic circumstances are likely to have more stimulating home environments than

[1] Sullivan (2003) explains that, "By 'level of sophistication' I mean how in depth the programme is and how much attention it requires of the viewer" (p. 66). So, for example, "Frasier" and "Shooting Stars" are sophisticated and unsophisticated programmes (correspondingly) within the comedy genre.

peers of less advantaged SES background. In addition, more frequent engagement in home-centred activities is associated with better academic performance and development. Nevertheless, it would seem that some types of home-centred activities, but not others, are associated with positive academic outcomes.

2.6 Research Questions

The review of empirical findings provided in section 2.5 indicates that, within each of the three domains, that is: home-centred activities, commercial-leisure OSA and social-group OSA, some activities are beneficial to children's academic performance and development, and that children's likelihood of experiencing such activities rises with their SES. But there is relatively little evidence on socio-economic disparities in British school-age children's participation in these three OSA domains. Similarly, there is little research into the associations between British school-age children's attendance at these OSA and their academic performance and progress. Consequently, the implications of socio-economic variation in children's participation in OSA for the reproduction of the academic achievement gap in the middle childhood years in are imperfectly understood.

To address this shortage of knowledge, the present study will analyse the association between SES, participation in various leisure activities outside the regular school setting, and children's academic outcomes. It will frame the analyses and explain the results by referring to the cultural and social capital theories discussed in sections 2.3-2.4. The study will explore the following research questions:

Research question 1 -
Is there a Socio-Economic Disparity in Children's Participation in OSA?

In answering research question 1, this study has the following objectives:

- To explore the question of whether, in Britain, school-age children's likelihood of participation in leisure OSA varies by SES, as measured by their parental occupational status, educational level and income, while controlling for other family characteristics and geographical effects;
- To provide empirical evidence on the associations between SES and school-age children's participation in a wide variety of out-of-school activities which are categorised under the headings of: a) social-group, b) commercial-public, and c) home-centred activities;
- To offer a socio-cultural explanation for the difference in the participation of school-age children from various SES groups in the three categories of OSA described above.

Research question 2 -
Taking into Account Children's SES, Is Participation in OSA Associated with their Academic Outcomes?

And:

Research question 3 -
Does the Effect of Participation in OSA on Academic Outcomes Vary across Different SES Groups?

In answering research questions 2 and 3, this study attempts to:

- Explore the "net" associations between participation in various types of OSA and school-age children's academic outcomes, after controlling for key socio-economic factors. That includes both academic performance at age 7 and academic development between age 5 and 7;
- Assess whether there are interactions between participation in various OSA and SES on children's academic development in the middle childhood years;
- Shed light on the role of children's participation in various OSA on the social reproduction of inequalities in academic outcomes: that is, does participation in these activities widen, narrow or simply maintain the academic achievement gap among children from dissimilar SES groups?
- Offer an explanation of why participation in a range of leisure OSA might aid the academic performance and progress of school-age children, by using concepts and ideas drawn from the theories of social and cultural capital.

Before carrying out the empirical analysis, the next section discusses the data source and analytic strategy I will use to answer the outlined questions.

Chapter 3 - Methodology

3.1 Introduction

This chapter describes the data used in the present research and the methodological approach adopted to analyse them. The chapter is structured as follows: section 3.2 presents the method and data source that were chosen for this study, explaining why these are appropriate for exploring the links between participation in various OSA and the academic outcomes of children in dissimilar SES groups. Section 3.3 introduces the current study's working sample. Next, section 3.4 describes the variables used. Finally, section 3.5 discusses the statistical techniques applied to analyse the data.

3.2 Method and Data Source

3.2.1 Quantitative Analysis of Secondary Survey Data

The research method used in this study to answer the research questions outlined in section 2.6 is the quantitative analysis of data from a large-scale survey. In Britain, there is a long history of conducting large-scale surveys aimed at understanding people's lives and promoting their well-being (Elliott, 2011). This tradition led to the formation of a large inventory of data, including data from birth cohort studies like the mid-1940s National Survey of Health and Development (NSHD), the 1958 National Child Development Study (NCDS), the 1970 British Cohort Study (BCS70) and the 2000 Millennium Cohort Study (MCS). Birth cohort studies are a unique

example of longitudinal surveys because they collect data from a specific group of more or less same-age individuals, at a number of separate points in time (for further discussion see: Elliott, 2011; Hakim, 2000; Ruspini, 2002).

Birth cohort studies offer researchers several analytical advantages. Firstly, exploiting data from such surveys allows researchers to perform cross-sectional explorations from which they can generate a snapshot of the lives of the sampled group of individuals. As Rose (2000, p. 7) said of such analyses: "…they offer us a slice through time and the various social processes with which they are concerned".

More importantly, these surveys also make it possible to conduct longitudinal analyses which allow the researcher to examine the following issues: the duration of events people experience (Nazroo, 2011, p. 226); whether trends are constant or change over time (Ruspini, 2002, p. 24), and the "timing and sequencing of events within individuals' lives" (Elliott, 2011, p. 213). An additional benefit associated with the analysis of secondary datasets, as Devine (2003, p. 285) explains, is that researchers can build on findings from previous studies which used the same dataset, giving them the opportunity to approach the questions of interest in a refined manner.

The potential of secondary quantitative analysis of data from large-scale survey data to contribute to knowledge construction and policy-making has long been recognised by social scientists (Hyman, 1972; Ruspini, 2002; Smith, 2008). Yet, as Smith (2008, p. 10) asserted, this method "… has remained relatively underused in many areas of the social sciences in the UK". Gorard, Rushforth and Taylor (2003), in addition, pointed out that, among senior academic stakeholders within the field of education, there is

widespread agreement that this area suffers a particular shortage of well-executed quantitative studies.

The methodology that I have chosen for this research responds to the shortage of UK-based quantitative analysis of secondary data (Gorard et al., 2003; Smith, 2008) as well as conforming to the well-recognised tradition of this line of research (Hyman, 1972; Kiecolt & Nathan, 1985; Ruspini, 2002; Singer & Willett, 2003; Smith, 2008).

It should be noted, however, that although a quantitative analysis of secondary survey data provides researchers with analytical advantages, this methodological approach has weaknesses (see Kiecolt & Nathan, 1985). A further discussion of the benefits and drawbacks of quantitative analysis of secondary survey data, and how these benefits and drawbacks are relevant to the present study, will be given following an introduction to the chosen source from which data for the current project were extracted.

3.2.2 The Datasets Considered

Data for the present study were taken from the Millennium Cohort Study (MCS). As stated in section 2.6 (p. 120), this research intends to examine the associations between participation in three categories of leisure OSA – social-group, commercial-public and home-centred activities – and the academic outcomes of British school-aged children in different SES groups. This aim generated four key requirements on the basis of which potential datasets were scrutinised:

1. The dataset should include information gathered from the target population; that is, from primary-school children who, at the time of the survey, reside in the UK.
2. It should include questions on children's participation in a variety of leisure activities outside the regular school day.
3. The dataset should also include a range of indicators on participants' socio-economic background, in particular the three SES factors in which the current study is interested, namely: parents' occupation, education and income levels.
4. In addition, it must include measures of academic performance gathered from the participants at the time they attended primary school, with information about their academic skills at an earlier time point that might capture early experiences affecting the outcomes of interest as well as allow the estimation of the children's academic progress in the middle childhood years.

This list of requirements identified several datasets as potential candidates for the current research, including the already mentioned BCS70, NCDS, EPPSE and MCS, but also the Avon Longitudinal Study of Parents and Children (ALSPAC) and the Growing Up in Scotland (GUS) survey.

The MCS was favoured over the alternative datasets because not only did it fully meet the four criteria listed above, but also:

1. It includes the most up-to-date data (together with GUS) on young children's lives. This is important especially in light of the unparalleled policy interventions in the provision of out-of-school care and education services across the UK during the years of the New Labour administration (1997-2010) (Cunningham-Burley et al., 2005; DCMS,

2001; Kinnaird, 2006; Lowden, Garside, & Hamilton, 2005; Mayall & Hood, 2001; Penn & Randall, 2005; Scottish Government, 2005, 2007; Wincott, 2006; Winter, 2008).

2. The "Millennium" cohort members were already in primary school when the present study was carried out. In contrast, the majority of GUS participants were still in the pre-school year.
3. The MCS is the largest survey in terms of number of participants. A large sample size is beneficial since it allows more accurate estimates to be achieved as well as a higher flexibility in terms of model building. Hence the analysis of a large-scale dataset should enable the researcher to produce more robust explanations and predictions. Such robustness may be achieved through the introduction of a relatively high number of independent variables as well as by fitting interaction terms into the analysis. In addition, the outcomes of studies relying on large samples, compared to those produced by analysing small samples, are less likely to be biased by the presence of a few exceptional cases.
4. The MCS includes data gathered across the four home-countries (by contrast to the English EPPSE and ALSPAC or the Scottish GUS surveys), hence allowing a whole UK or GB analysis.

The MCS, therefore, is well suited for this study. The next section provides further details on the purposes and characteristics of the MCS.

3.2.3 The Millennium Cohort Study (MCS)

An Introduction to the MCS

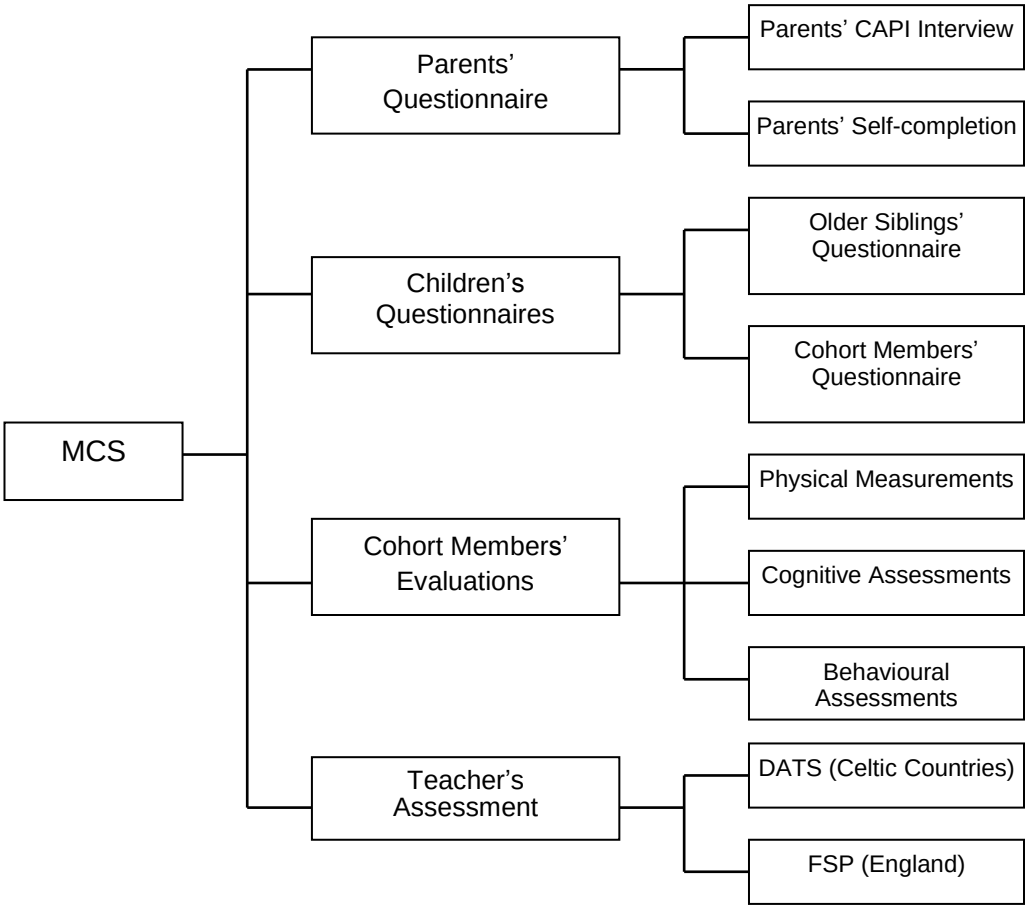
The MCS is the most recent UK large-scale birth cohort study. Like previously commissioned birth cohort studies in Britain, the MCS is a multiple-purpose survey. It is designed to follow a group of individuals repeatedly over an extended period of time, gathering information on their health, wealth, education, family life and progress, throughout their infancy, childhood and adolescence and into adult life (Hansen, Jonson, Joshi, Jones, & Mcdonald, 2010). To capture the wider context in which the cohort members develop socially, physically, emotionally and cognitively, the MCS also gathers data on the conditions of their closest family members (Hansen et al., 2010).

Joint responsibility for the design and management of the MCS was granted by the British Government to the Centre for Longitudinal Studies (CLS) and NatCen, which issued the first sweep of data collection in June 2001 (MCS1), when the sampled cohort babies were about 9 months old. The second, third, fourth and fifth sweeps of data collection for the MCS were conducted in 2003/4 (MCS2), 2006 (MCS3), 2008 (MCS4) and 2012 (MCS5).

Computerised data files with information from the first four sweeps, and technical manuals with guidance on how to analyse these data, were deposited via the Economic and Social Data Service (ESDS) website. For the current study, MCS3 and MCS4 SPSS and STATA data files were downloaded, together with a set of technical manuals giving guidance on how to synchronise the different parts of the survey and analyse them.

Thus far, data for the MCS were collected using 4 instruments: a) a parents' questionnaire, b) children's questionnaires, c) cohort members' evaluations, and d) a teacher's assessment. Figure 3.1 provides a breakdown of the MCS by these various instruments.

Figure 3.1: A breakdown of MCS by its various instruments



For the present study, data were drawn from the following parts:

The MCS parents' questionnaire. This questionnaire was administered at each of the study's sweeps to the cohort members' main-carers. In 97% of the sampled households, these were the children's mothers. In addition, when applicable, a shorter version was administered to the main respondent's partner. The parents' questionnaire was completed both through a face-to-face computer assisted personal interviewing (CAPI)

technique with a trained fieldworker, and by the main-carer filling out a computerised self-completion questionnaire. It collected information on a wide range of topics, including items of particular relevance to the present research, namely parents' employment, education and income; the family's size and structure; cohort member's education and schooling; and cohort member's engagement in out-of-school and home-centred activities.

Cohort members' evaluations were added to the MCS at the second sweep and were repeated thereafter at each of the study's sweeps. These evaluations included physical measurements as well as behavioural and cognitive assessments. While the physical measurements and behavioural assessments are not central to the current research, cohort members' cognitive assessments at age 5 (MCS3) and 7 (MCS4) are of particular importance and, together with data from the parents' questionnaire, would allow research questions 2 and 3 to be answered. These assessments included, at MCS3 when cohort-members were 5 years old, the "Story of Sally and Anne" cognitive task, and three sub-tests from the British Ability Scale II (BAS2) battery, namely the picture similarities, pattern construction and naming vocabulary tests. At MCS4, the 7-year-old cohort members repeated the "Story of Sally and Anne" task, BAS2 pattern-construction and word-reading subtest,[2] and a newly introduced "progress in Math" assessment.

The teachers' assessment was introduced to the MCS as a paper-and-pencil self-completion questionnaire at the third sweep when the majority of cohort members entered their first year of primary school. The teachers'

[2] At MCS4, the "word-reading" sub-test replaced the early years "naming vocabulary" subtest because it is suitable for assessing the verbal skills of school-age children (Hansen et al., 2010, p. 53).

assessment aimed at gathering extra information on the cohort members' school experience and their academic performance. At MCS3, these data were collected from English teachers via the Foundation Stage Profile (FSP) self-completion questionnaire, with a response rate of 95% (Hansen & Joshi, 2008). In Scotland, Wales and Northern Ireland, cohort members' teachers completed the Devolved Administration Teacher Survey (DATS), an FSP equivalent designed for the MCS. The DATS generated a response rate of between 55%-68% (Hansen & Joshi, 2008, p. 99). At sweep 4, data from cohort members' teachers were collected in all 4 UK countries using a unified teacher's assessment tool. This yielded an overall response rate of 70.1%, with no major differences across countries (Huang & Gatenby, 2010, p. 37).

At both sweeps, the assessment captured teachers' perceptions of the cohort members' academic performance in a range of learning subjects, and their behaviour and relationships with peers. The assessment also collected information on whether the cohort member had special educational needs, the school and class setting, and the reporting teacher's professional experience and qualifications.

MCS Sample and Participants

The MCS Sample was designed to select approximately 20,000 British babies who were born between September 2000 and January 2002 (Hansen et al., 2010, p. 36), and, as outlined in Plewis (2007), to:

a) Include a sufficient number of participants in each of the 4 UK countries to allow both inter and intra country analyses,

b) Allow the overrepresentation of participants living in areas with high rates of child poverty,

c) Allow the overrepresentation of participants living in areas with high percentages of ethnic minorities (in England only).

To meet these requirements, a complex multi-stage sampling framework was developed using a clustered design and the over-sample of the sub-groups of interest. Such sampling technique is a common procedure in large-scale social surveys (Kalton & Citro, 2000, p. 44).

Initially, each geographical area in the 4 UK countries was categorised within one of two strata, that is: either as a "disadvantaged stratum", if falling among the 25%-38% poorest electoral wards as measured by the ward-based Child Poverty Index, or as an "advantaged stratum" if not among the above (Plewis, 2007, pp. 8–14; Shaw & Calderwood, 2004, p. 17).

In the English sub-sample a further stratification was introduced to allow the over-sampling of geographical areas with high percentages of ethnic minorities (Plewis, 2007, p. 8). Subsequently, wards within the 4 countries and strata were ranked in descending order according to their size. A total of 398 wards were then selected, using a random sampling procedure based on a pre-determined fixed interval (Plewis, 2007, p. 15). In each of the 398 selected wards, all babies who were born in the UK on an eligible birth date were invited to take part in the first sweep of the MCS (Shaw & Calderwood, 2004, p. 16). With a response rate of 76.7%, this sampling procedure yielded a cohort of approximately 18,550 English, Welsh, Scottish and Northern Irish 9-month-olds who were first surveyed during 2001-2002 (Shepherd, Smith, Joshi, & Dex, 2004, p. 21).

As with other longitudinal studies, however, the MCS sample size declined over the years. This attrition occurred because families chose to opt out of the study, could not be traced, or left the UK, or because of the unfortunate case of a cohort member's death. Table 3.1 summarises the survey's sample sizes and response rates at each of the MCS's first 4 sweeps.

Table 3.1: MCS sample size and response rates

	Data Collection Period	Children's Age (about)	Issued & Achieved Sample	Response Rate*
MCS1	2001-2002	9 Months	I=24,180, A=18,553	76.7%
MCS2	2003-2004	3 Years	I=19,941, A=15,590	78.2% (64.5%)
MCS3	2006	5 Years	I=19,244, A=15,246	79.2% (63.0%)
MCS4	2008	7 Years	I=17,031, A=13,857	81.4% (57.3%)

* In brackets: the percentage of participants from original sample (MCS1).
Adapted from: Chaplin-Gray, Gatenby, Simmonds, & Huang, 2010, p. 80; Ketende, 2010, p. 9; Plewis, 2007, pp. 24–30.

Using MCS Data in this Study - Benefits and Drawbacks

The appropriateness of the MCS for this research has been demonstrated earlier. While a secondary analysis of its data involves many advantages, such analysis also carries several disadvantages.

The first advantage of analysing the MCS is that it is possible to generalise results from such analyses from the sample to the wider population, with a good level of confidence. This is because, by using appropriate statistical techniques (which account for its clustered and stratified sample design), the MCS sample can be treated as a nationally representative sample. These techniques will be detailed in section 3.5.

Given the time and resources that were available to me, I concluded that a self-selected sample would impose major restrictions on the inferences I would be able to make. I therefore preferred to use secondary data drawn from the MCS.

A second benefit is the cost and time saved by basing the current research on existing MCS data. This is important since the resource and time limitations involved in this doctoral research meant that embarking on an original data collection could have left less time for addressing the theoretical and methodological challenges the study presented and developing my capacity to apply more advanced methods of data analysis, such as multilevel models for survey data.

A third benefit of using MCS data is the provision of access to high-quality variables, including standardised items and scales such as the BAS2 cognitive tests. These variables are derived by using conventional well-theorised and widely tested indexes. For example, in the case of cognitive tests, age-appropriate norms are calculated based on results obtained from a large number of participants, usually in different times and places, allowing greater reliability to be achieved. The analysis of standardised variables, in addition, enables me to compare the current study's outcomes to findings from previous research in which the same measures were used, and thus to support or criticise existing findings. Similarly, using standardised variables renders the current study a good reference point for future studies interested in exploiting the same measures.

A fourth advantage of large-scale surveys, and this includes the MCS, is that they gather information on a large number of participants, making it possible to work with a much larger number of cases than could

reasonably be examined by a collection of primary data carried out by a single researcher. This is important because it allows the current research to perform robust analyses through the construction of elaborated statistical models that require both good-quality variables and a large number of participants.

However, there are also drawbacks associated with conducting a quantitative analysis of secondary survey data from the MCS. Given the large amount of information available in the MCS (some irrelevant to the study), one disadvantage is the need to spend a large amount of time in data construction and management.

Another difficulty presented by the analysis of secondary data is the lack of variables specifically designed to answer the research questions posed by the present study. Potentially, this lack could lead to a theoretical validity problem arising from a weak overlap between the theoretical concepts informing the investigation and their operational definitions (Cohen, Manion, & Morrison, 2005, p. 107).

To avoid such a validity issue, given the content of the MCS and the multifaceted nature of cultural capital, I decided that this study will be focused solely on exploring children's cultural participation, as manifested by their engagement in leisure OSA, meaning that it will not involve examination of their cultural tastes and habitus. I also took steps to address the issue of content validity; that is, to ensure that cultural participation is addressed in depth and breadth (Cohen et al., 2005, pp. 109–110). This was done by selecting several distinguished categories of activities and, within each of these categories, activities representing different levels of cultural capital, in keeping with the literature in this field.

In the case of the present study, therefore, I concluded that analysing secondary data from the MCS involves greater benefits than drawbacks.

3.3 The Current Study's Working Sample

The current research intends to explore the links between SES, participation in out-of-school leisure activities, and school-age children's academic outcomes. Thus, data for the project were extracted from MCS3 and MCS4, when the cohort children were aged around 5 and 7 years old respectively. These data represent cohort members' circumstances and academic performance at their first year of primary school, as well as two years later, when they were studying at P3.

Initially, all children who were present at MCS3 and MCS4 were included in the working sample. However, a decision was then taken to focus on the British sample rather than on the complete UK sample. The reason was that exploratory models I fitted at an early stage of this research showed no significant differences among the countries of Great Britain (i.e., England, Wales and Scotland). However, these analyses demonstrated some significant differences between the samples of Northern Ireland and the rest of the UK, especially in terms of children's participation in social-group activities, and the links between participation in such activities and the SES characteristics of interest. These differences would have required a study of their own. In light of these preliminary findings, and also due to the relatively small number of cases in the Northern Irish sample ($N_{(MCS3)}$=1,353), I decided to omit NI and focus my study on the whole of Great Britain.

In addition, in the case of families with multiple births (i.e., twins or triplets), the working sample for the current study exploited data for only one child per family, thereby dropping a further 204 cases. This was to avoid double-counting these families.

After the above exclusions, the working sample in the present study is composed of 12,585 cohort members. When teachers' assessment is analysed, the sample is further reduced to 8,111 cohort members, since this information is only available for about two-thirds of the sample.

Table 3.2 presents the distribution of participants in the complete working sample and in the sub-sample for which teacher's assessment was available, by selected SES factors and country. The data show little difference in these distributions.

Table 3.2: The current study's working sample and teachers' sub-sample, by SES and country[a]

Complete working sample ($N_{(unweighted)}$=12,585)	% weighted	% Not weighted	**Teachers sub-sample ($N_{(unweighted)}$=8,111)**	% weighted	% Not weighted
Child's sex			**Child's sex**		
Boy	50.8	50.8	Boy	50.0	50.0
Girl	49.2	49.2	Girl	50.0	50.0
Parental NVQ			**Parental NVQ**		
No formal qualification	5.0	7.3	No formal qualification	4.1	6.0
GCSE	5.7	7.0	GCSE	5.3	6.2
A Levels	36.8	38.0	A Levels	36.1	37.3
University Degree	52.5	47.7	University Degree	54.5	50.5
Parental NS-SEC			**Parental NS-SEC**		
Parents are not at work	16.3	20.6	Parents are not at work	14.5	17.8
Routine/Manual	17.7	20.0	Routine/Manual	16.7	18.9
Intermediate occupation	19.9	19.3	Intermediate occupation	20.7	20.2
Managerial/Professional	46.1	40.2	Managerial/Professional	48.1	43.1
Income (weekly £)			**Income (weekly £)**		
Bottom quartile (>320)	18.9	25.0	Bottom quartile	17.0	22.0
2nd quartile (321-640)	22.8	25.0	2nd quartile	22.1	24.0
3rd quartile (641-961)	27.6	25.0	3rd quartile	28.0	26.0
Top quartile (962<)	30.7	25.0	Top quartile	32.9	28.0
Country			**Country**		
England	85.9	71.3	England	85.9	71.0
Scotland	8.9	13.0	Scotland	9.2	13.9
Wales	5.2	15.7	Wales	4.8	15.1

a.Weight used: "WEIGHTGB", provided by the CLS upon request. The weight is not available in the deposited MCS files.

3.4 Variables

The variables used in the present study measure the cohort members' academic outcomes, their socio-economic characteristics and their participation in social-group OSA, commercial-public OSA and home-centred activities. The empirical and theoretical rationales used for the selection of these variables are discussed in the following sections.

3.4.1 Academic Outcomes

Three dependent variables were used in the present study as indicators of children's academic performance at age 7 and their academic development between age 5 and 7:

Verbal test: Cohort members' verbal performance at age 7 is assessed in the current study by using the BAS2 "word reading" sub-sample which was administered at MCS4. As has been discussed earlier in section 3.2., the school-age BAS2 battery is a set of standardised tests, all aimed at assessing the cognitive skills of individuals aged between 6 and 16 years old. The word reading sub-test includes 90 words which respondents are asked to read aloud to an interviewer. To score a point, the child must use the correct pronunciation, although regional accents and speech impediments are taken into account (NatCen, 2009b, pp. 18–40; Parsons, 2006, pp. 13, 17–19). The "word reading" list begins with familiar and simple words like "THE" and "UP", continues with words of intermediate difficulty like "INVITE" and "GUEST" and concludes with complex, less well-known words like "TERTIARY" and "MNEMONIC". The number of words presented to a

particular respondent depends on his or her age and verbal skills. Normally, children will not complete the full list of 90 words. The test will progress as long as they give correct answers and will terminate following a number of consecutive incorrect responses (Parsons, 2006, p. 33). Overall, a higher score in the word-reading test represents a better verbal performance. In this thesis, age-adjusted t-scores were used, normed for three-month age groups separately, thus allowing good control over differences resulting from children's ages. The distribution of the scores obtained at MCS4 is given in Figure 3.2.

Figure 3.2: Histogram of Cohort Members' Verbal Test Scores, at Age 7 (Data are Weighted)

In addition to children's verbal test scores at age 7, their verbal performance at age 5 is used in this study as an independent variable to explore the verbal progress the cohort members achieved between age 5 and 7. Exploring students' educational progress or cognitive development by calculating the change in their scores on equivalent tests that were

administered at two distinct time point, is a well known technique in educational research (see: Alexander et al., 2007; Downey et al., 2004; Hall et al., 2010; Rasbash et al., 2010) which has also been used in earlier analyses of the MCS (for example: Becker, 2011; Cullis & Hansen, 2008; Hansen & Jones, 2009; Washbrook, 2010). Models that estimate the academic progress students achieved within a certain timeframe are often referred to in the literature as "value-added" models (Hansen & Jones, 2009; Washbrook, 2010) or "gain-scores" models (Becker, 2011; Downey et al., 2004). These "developmental" models are essentially different to "performance" models. While the latter models allow researchers to predict the test score of a student with a known set of background characteristics, the former models provide an opportunity to predict whether the academic skills of this student have increased, declined, or remained stable over time. In studies exploring the socio-economic gap in students' academic outcomes, developmental models are particularly useful since they allow to assess whether students from different SES groups progress at a similar rate, or are the academic skills of students with specific SES profile develop more quickly than those of counterparts lacking similar SES characteristics. In the context of this study, such insight can be achieved by the inclusion of the cohort members' verbal scores from the age 5 sweep, as an independent variable in models that use age 7 verbal scores as a dependent variable.

In addition to allowing this research to assess children's verbal development in the middle childhood years, including the age 5 verbal test results will make it possible for this research to capture at least some of the effects of previous experiences that might have influenced the cohort members' verbal skills before the sweep 3 interview. Adding age 5 scores as

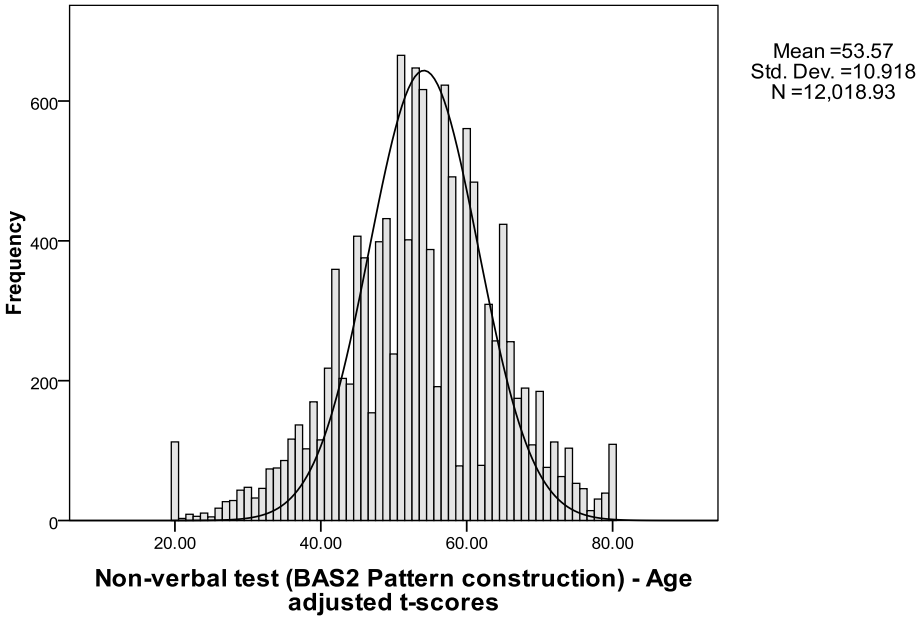
an independent variable should therefore allow the control of the effects of factors such as childcare and the pre-school years' home environment on academic performance at age 5.

In the MCS, the age 5 verbal performance is assessed by the BAS2 "Naming Vocabulary" sub-test. This sub-test is standardised for children aged between 3 years and 5 years and aims to assess the spoken vocabulary of pre-school children. In this exercise, the participant is presented with a coloured booklet consisting of 36 pictures which he or she is asked to name (Melhuish, 2010, p. 8). An answer is judged as correct if the child states the standard name of the object presented on the card. Responses are also deemed acceptable in the case of over-specification of the pictured object (for example, if the child says "trout" in response to a picture of a fish) (Hansen et al., 2010, p. 35; Parsons, 2006, pp. 8, 29). The better the children perform, the more they progress in the test, which ultimately terminates when several incorrect responses are given. In the current research, age-adjusted t-scores were used.

Non-verbal test: Cohort member's non-verbal performance is assessed in the present research using the BAS2 "pattern construction" sub-sample which was administered as part of MCS4. The pattern construction sub-sample is normed both for pre-schoolers and for school-age children. In this exercise, respondents are introduced to a particular pattern which they are asked to construct, within a limited time, by putting together black and yellow coloured three-dimensional blocks (NatCen, 2009b, pp. 50–88). The pattern construction sub-test contains a total of 26 tasks of increasing difficulty. The respondent's performance on each task is marked on the basis of accuracy and speed. In the current study, analyses exploring cohort

members' non-verbal performance at age 7 were conducted using the standardised age-adjusted t-scores. The distribution of these scores is presented in Figure 3.3.

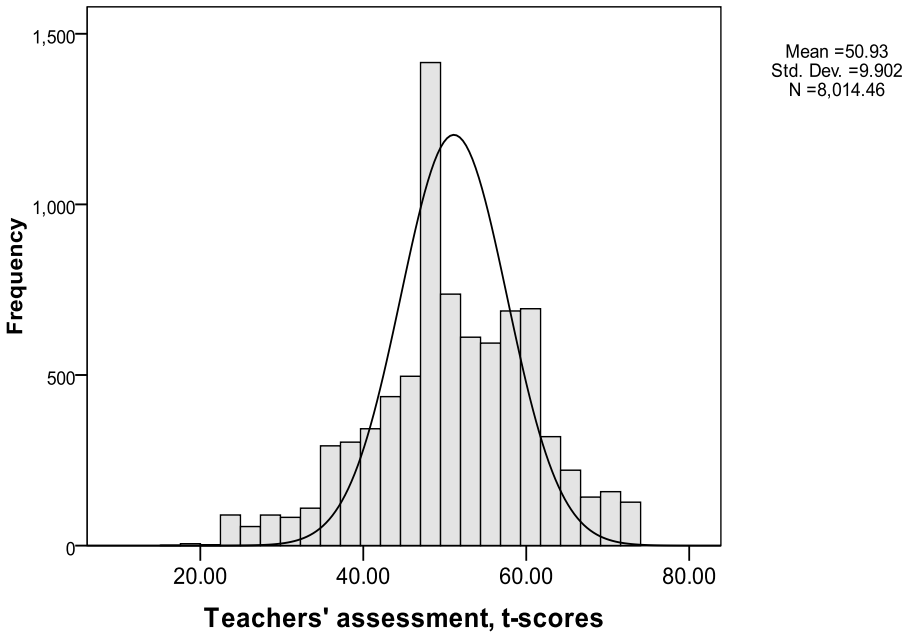
Figure 3.3: Histogram of Cohort Members' Non-Verbal Test Scores, at Age 7 (Data are Weighted)



In addition, an independent variable indicating the cohort members non-verbal test scores from the age 5 sweep is used in this study to assess the children's development between age 5 and 7. These scores are age-adjusted t-score, and they were calculated based on the children's performance on the BAS2 pattern construction test that was administered at MCS3 (M=50, SD=10). The inclusion of the age 5 scores in "developmental" models aimed at exploring the associations between participation in OSA and children's progress, also makes it possible for this research to control for experiences that might had influenced the non-verbal development of the cohort members, before the sweep 3 interview.

Teachers' assessment: As part of the MCS fourth sweep, teachers were asked to complete a questionnaire on issues surrounding the cohort members' education. This questionnaire captured the teachers' perception of cohort-members' academic ability in a number of learning subjects, by asking them to "… rate the child in relation to all children of this age (i.e. not just their present class or, even, school)" (NatCen, 2008b, p. 3), using a 5-category scale ranging from "well above average" to "well below average". The learning subjects included: listening and speaking, physical education, expressive arts, reading, writing, science, maths, and information and communication technology (ICT).

Figure 3.4: Histogram of Teachers' Assessment Scores, at Age 7 (Data are Weighted)



A reliability test performed at an early stage of the present research showed that a combination of these items produced a good Cronbach's alpha of 0.78, which was increased to 0.92 upon dropping the first 3 items. Based

on these results, a teachers' assessment scale was computed using the 5 remaining items. The variable was then converted into t-scores, as with the two other academic outcomes of interest. The distribution is presented in Figure 3.4.

As with the two standardised academic outcomes reviewed earlier, here, too, the teacher's assessment at age 5 is used. This independent variable is included to investigate whether, and to what extent, participation in OSA is linked to a change in teachers' perceptions of their students' academic skills in the middle childhood year. The age 5 teachers' assessment variable uses data from the third sweep of the MCS, in which the cohort members' teachers completed either the FSP questionnaire (in England) or the equivalent DATS questionnaire (in the Celtic countries). Their responses were used to derive a variable similar to the age 7 teachers' assessment variable. Both the age 7 and age 5 teacher's assessment variables were prepared specifically for the current study, and in the process were transformed into t-tests with M=50, and SD=10. It should be noted, however, that although this procedure made it possible to control for cohort-members' perceived ability at age 5, the variable does not indicate whether the same teacher completed the assessment at both sweeps.

3.4.2 Socio-Economic Characteristics

The socio-economic independent variables in this study centre on parent, child, household and family characteristics.

The literature reviewed in Chapter 2 of this thesis showed that parental education, parental occupation and family income are three SES factors closely linked both to children's academic performance and their engagement in leisure activities. The current study follows the traditional social stratification approach and uses parents' occupation, education and income levels as key measures of SES. In addition, the current study also takes into account the cohort member's gender and a range of family characteristics.

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Parent, Child and Household Characteristics

Parents' occupation (measured by NS-SeC): The MCS includes variables that specify parents' occupational category. These variables were derived at each sweep by the CLS in accordance with the National Statistics Socio-economic Classification (NS-SeC). In the early stages of this research, 5-category NS-SeC variables indicating mothers' and fathers' occupation at MCS4 were used separately. These variables were then recoded to account for parents who were not in work, thereby generating two new 6-category occupation variables. Since both mothers' and fathers' occupation had similar effects on the outcomes analysed, a unified 6-category variable that captures the highest occupational status held by either the mother or father of the cohort member was derived. Finally, to allow the construction of complex models, without compromising the statistical power of the planned analyses, I collapsed the variable to 4 categories, following the ONS guidelines. The final variable distinguishes between: Routine and Manual

occupations (coded 1), Intermediate occupations (2), Managerial and professional occupations (3), Both parents not in work (4).[3]

Mothers' working hours: Continuous variables specifying the average weekly working hours of each parent at MCS4 were selected for inclusion in the analyses. The purpose of including these variables was to account for a possible association between children's engagement in the leisure activities of interest and their parents' working hours. This factor is important since it is likely, for example, that parents who spend long hours at work enrol their children in out-of-school clubs in larger numbers than parents who work shorter hours, because these clubs provide them with childcare for the afternoon hours. Likewise, long working hours can restrict parents' free time, leading them to spend less time with their children in shared-leisure activities in the home environment. By contrast, such parents may choose to compensate their children for the longer hours of absence by spending more time engaged in such activities than parents who work shorter hours.

Analyses carried out at an early stage of the present research showed that mothers' working hours, but not fathers' working hours, are relevant to the issues examined. Consequently, fathers' working hours were dropped from the later analyses.

Parents' education: The MCS includes variables indicating the highest educational qualification achieved by each cohort member's mother and father, classified according to the UK's national vocational qualification (NVQ) classification. Preliminary models analysed the mothers' and fathers' education separately. However, because the results showed that both genders' NVQ information had similar effects on children's participation in

[3] For ordinal analyses, "parents not in work" was coded "0".

OSA and children's academic performance, a unified variable specifying the highest NVQ held by either the cohort member's mother or father was derived. The unified variable was then collapsed from 7 to 4 categories. That recoding had two purposes: firstly, to allow the analysis of a sufficient number of cases from each educational level considered, and secondly, to combine categories that presented considerable similarities in their links to children's participation in OSA. The final variable, therefore, distinguished between: "No formal qualifications" (coded 1), "GCSE or equivalent" (2), "A levels or equivalent" (3), "University degree or equivalent" (4).

Family's income: At each sweep, the MCS provides information on the economic circumstances of the home in which the cohort members live. In the present study, the MCS4 modified OECD equivalised income variable was selected to gauge families' economic capital. I favoured the modified OECD equivalised income scale over alternative income measures available in the dataset (for example, net family income or predicted weekly income) since it takes into account the size and composition of different families (Ketende, Joshi, & Michael, 2010, pp. 278–279), and also because it was used in the prior MCS studies reported earlier in Chapter 2. Since the variable in its deposited form was considerably skewed, that is, a high proportion of cases were concentrated at the bottom end of the distribution, I decided to group it into four bands. This procedure produced a variable coded as: 1=Bottom income quartile, 2=Second income quartile, 3=Third income quartile, and 4=Top income quartile. This 4-category income variable was used in the present research.

Child's Gender: Cohort-member's gender was coded as 1=girl or 2=boy.

Family Characteristics

The following independent variables were included in the research to control for the influence of family characteristics, when analysing the relationship between key SES factors and children's participation in OSA, or the relationship between participation in OSA and academic performance.

Parenting composition: An MCS4 variable distinguishing among 6 marital status categories was recoded into a binary variable to identify: 1=co-parent household (79%), and 2=single-mother household (21%).[4]

Other cohabiting adults: A binary MCS4 variable was used to distinguish between: 0=households with no other permanent resident adults other than cohort member's parents (6%), and 1=households in which, besides cohort-member's parents, there are other permanent adult residents (94%).

Number of children in the household: A continuous variable specifying the number of children in the household at MCS4 was used at the initial stage of this research. It was collapsed to distinguish between: 1=Cohort member is an only child (13%), 2=Two children (46%), and 3=Three or more children (41%).

Frequency of meetings with grandparents: A 7-category variable indicating how often the cohort member sees his or her grandparents was extracted from MCS4. To allow a sufficient number of cases in each category, the original variable was recoded in four categories to distinguish between: 1=every day or almost every day (35%), 2=once or twice a week (31%), 3= once or twice a month (16%), and 4=less often or not at all (18%).

[4] I use the term single-mothers in this thesis although about 3% of the single-parents in the MCS are single-fathers.

3.4.3 Participation in Social-Group OSA

In the present research, participation in social-group OSA refers to children's engagement in out-of-school clubs and classes. In particular:

Participation in after-school clubs: At MCS4, parents were presented with the following question; "Thinking about a typical week in term-time, does [child's name] go to an out-of-school or homework club after school?" (NatCen, 2009a, p. 101). A similar question was included at MCS3[5] (NatCen, 2008a, p. 134). A first variable included in the current research is a binary variable that represents parents' responses to the discussed question at sweep 4, when the cohort members were 7 years old. This variable was coded 0=No, cohort member doesn't attend an after-school club, or 1=Yes, cohort member attends an after-school club. This dependent variable was used in models aimed at exploring research question 1. To answer research questions 2 and 3, an independent variable has been derived based on parents' responses at MCS3 and MCS4. This variable distinguishes between 0=Cohort member never attended an after-school club, 1= Cohort member attended an after-school club only at MCS3, 2= Cohort member attended an after school-club only at MCS4, 4= Cohort member attended an after-school club at both sweeps.

Participation in sport and physical activity (PA) clubs: At MCS4, parents were asked the following question: "Now some questions about things that [child's name] might do outside school lessons … how many days a week

[5] Homework clubs were included at MCS4 only. The MCS3 version of this question focuses solely on participation in after-school clubs.

does [child's name] usually go to a club or class to do sport or any other physical activity like swimming, gymnastics, football, dancing etc?" (NatCen, 2009a, p. 111). A similar question was asked at MCS3 (NatCen, 2008a, p. 138). The first variable to be included in the current thesis has been created by collapsing parents' responses at MCS4 from a 7-category scale (ranging from not at all to five or more days a week) to a binary variable coded as 0=No, cohort member doesn't attend PA clubs/classes, and 1=Yes, cohort member attends PA clubs/classes. This dependent binary variable was used to answer research question 1. To answer research questions 2 and 3, an independent variable was derived, combining parents' responses at both sweeps. This additional variable distinguishes between: 0=Cohort member never attended PA clubs, 1=Cohort member attended PA clubs only at MCS3, 2=Cohort member attended PA clubs only at MCS4, 4=Cohort-member attended PA clubs at both sweeps.

Participation in enrichment clubs: In MCS4, but not in MCS3, parents were also asked to specify whether their child attends any other types of out-of-school clubs: "…How many days a week does [child's name] go to any other clubs, classes or group activities (outside school lessons)?" (NatCen, 2009a, p. 111). In this case, parents could provide information about their child's engagement in a variety of clubs or classes including Drama, Arts & Crafts, Choir, Cubs/Brownies and others. On the basis of parents' responses, a binary variable was created to indicate child's participation either as 0=No, cohort member doesn't attend enrichment clubs/classes, or 1=Yes, cohort member attends enrichment clubs/classes. This variable was used both as a dependent variable (research question 1) and an independent variable (research questions 2 and 3).

As has been discussed earlier in section 2.5.2 (p. 89), participation in after-school clubs is used analytically as a proxy indicating engagement in more lowbrow activity than attendance at enrichment and PA clubs.

Frequency of Participation in Social-Group OSA: The availability of data on the number of days per week children go to the out-of-school clubs at MCS4 made it possible to derive an additional dependent variable capturing the links between SES and the extent of participation in the three types of clubs discussed in this section. This variable is meant to signify how "active" each cohort member is in terms of participation in social-group OSA. Initially, children's "level of activeness" was computed by summing up the values given by their parents for each of the three clubs (while omitting the categories "not at all" and "Less often than once a week"). This procedure generated a continuous variable ranging from 1=Attends one type of club, once a week, to 15=Attends all of these clubs, five days a week. However, the distribution of this new variable was skewed to a considerable extent, so that it failed to satisfy the assumptions of parametric analysis. As a result, I decided to collapse the scores into an ordered variable with three categories of approximately equal sizes. This final "activeness" variable was coded: 1=Low (1-2 club sessions a week), 2=Intermediate (3-4 club sessions a week) and 3=High (5 or more club sessions a week).

3.4.4 Participation in Commercial-Public Leisure OSA

At both MCS3 and MCS4, parents were asked to indicate whether or not, in the past 12 months, their child had attended a variety of commercial-public leisure OSA, including visits to museums, to professional sport events

and to other places and venues (NatCen, 2008a, p. 137, 2009a, p. 109). Parents, however, were not asked to specify the particular genres within each of these broad commercial-public leisure domains that the cohort members were exposed to (for example; impressionist painting vs. contemporary digital art or football vs. golf). In addition, there is no reference in the data to the frequency with which the cohort members attended the respective activities.

Nevertheless, the range of commercial-public leisure OSA included in the MCS allows selection for the current research of four examples broadly distinguishable by their levels of cultural capital. With reference to Bourdieu's works and the studies introduced in Chapter 2 which show that, within the commercial-public domain, attendance at art venues is commonly considered highbrow activity, the following types of commercial-public OSA were chosen:

Visits to art venues: In accordance with earlier discussion (e.g., DiMaggio, 1982; Jaeger, 2011; Kaufman & Gabler, 2004; Lopez-Sintas & Garcia-Alvarez, 1999; Robson, 2009), the example of visits to art venues has been chosen to represent children's participation in highbrow cultural activity, traditionally associated with high levels of cultural capital. The variables were derived on the basis of parents' responses as to whether or not their child had visited art venues such as galleries or museums in the 12 months prior to the interview date. A dependent variable was derived from the MCS4 data and was coded as: 0=No, cohort member had not been to art venues, or 1=Yes, cohort member had been to art venues. An independent variable was computed using both MCS3 and MCS4 data, to indicate the following options: 0=Cohort member had not been to art venues, 1=Cohort

member had been to art venues only at sweep 3, 2=Cohort member had been to art venues only at sweep 4, and 3=Cohort member had been to art venues at both sweeps.

Visits to the cinema: This type of commercial-public OSA has been chosen to represent cohort member's engagement in a more midbrow cultural form (see Yaish & Katz-Gerro, 2012), which can be associated with moderate levels of cultural capital. Here, too, data were used to derive two variables. One variable indicated whether or not the cohort member had been to the cinema at MCS4, and was coded as: 0=No, cohort member had not been to the cinema, or 1=Yes, cohort-member had been to the cinema. A second variable, based on both MCS3 and MCS4 data, was coded to show whether: 0=Cohort member had not been to the cinema, 1=Cohort-member had been to the cinema only at sweep 3, 2=Cohort-member had been to the cinema only at sweep 4, or 3=Cohort-member had been to the cinema at both sweeps.

Spectatorship of professional sport events: This sub-category has been chosen for the current study as an additional example of school-aged children's engagement in a more midbrow activity (with reference to research by Kane, 2004; Yaish & Katz-Gerro, 2012). As with visits to art venues and the cinema, two variables indicating whether or not the cohort member attended sport events, as a spectator, were derived. A variable based on data taken from MCS4 distinguished between 0=No, and 1=Yes, and a variable combining MCS3 and MCS4 data indicated whether 0=Cohort member had not been to professional sport events, 1=Cohort member had been to sport events only at sweep 3, 2=Cohort member had been to sport

events only at sweep 4, or 3=Cohort member had been to sport events at both sweeps.

Visits to theme-parks and funfairs: This final example of commercial-public leisure OSA has been chosen to signify cohort members' engagement in more lowbrow activities, associated with lower levels of cultural capital. The variables were derived in the same way as the previously described variables in this category. One variable, based on the MCS4, distinguished between 0=No, cohort member had not visited theme-parks and funfairs, and 1=Yes, cohort-member had visited theme-parks and funfairs. A second variable, combining MCS3 and MCS4 data, distinguished among: 0=Cohort member had not been to theme-parks and funfairs, 1=Cohort member had been to theme-parks and funfairs only at sweep 3, 2=Cohort member had been to theme-parks and funfairs only at sweep 4, and 3=Cohort member had been to theme-parks and funfairs at both sweeps.

In all four commercial-public leisure activities I listed, the derived binary variable was used in the present study as the outcome variable in analyses aimed at answering research question 1. The categorical variable was used as an independent variable in analyses intended to answer research questions 2 and 3.

3.4.5 Participation in Home-Centred Leisure Activities

At both MCS3 and MCS4, parents were asked to indicate the frequency with which their child engaged in leisure activities in the home environment (NatCen, 2008a, p. 137, 2009a, p. 109). As has been discussed earlier, studies exploring the effects of children's engagement in home-

centred activities on their academic outcomes often derive an index covering a range of different activities (e.g., Becker, 2010; Melhuish, 2010; Sylva et al., 2012). Some researchers, by contrast, choose to separate the variety of home activities into distinct dimensions such as play versus academic activities (e.g., Bodovski & Farkas, 2008; Ferragina et al., 2013). Others prefer to focus on specific home-centred activities and their effects on children's outcomes (e.g., Hartas, 2011; Sammons et al., 2004).

The present study adopts the last approach. It focuses on the links between SES and particular home-centred activities, and whether these particular activities are associated with the cohort members' academic performance. This decision resulted from the findings of models that were fitted at an early stage of this research. These findings showed that specific home-centred activities have different effects on children's academic performance, meaning that the use of a combined index would prevent these differential effects from becoming evident. A second rationale for choosing particular activities is theoretical. The current research is interested in going beyond exploring how the discussed activities relate to children's SES and academic performance. It attempts to explore whether children with specific SES characteristics are overrepresented in activities traditionally associated with different levels of cultural capital. Furthermore, the current research wishes to examine whether there is variation in the academic returns to participation in activities associated with different levels of cultural capital. Therefore, the following home-centred activities were chosen:

Parent-child "shared reading": The MCS contains an item in which parents were asked to indicate, using a 6-category scale: "How often do you read with or to [… child's name]?" (NatCen, 2008a, p. 145, 2009a, p. 119). The

distribution of answers to this question required the data to be collapsed into a dichotomous variable. In this procedure, two variables were computed based on both parents' responses: a) a variable indicating the level of engagement in shared reading at sweep 4, coded as 0=Low (once a week or less) or 1=High (more than once a week); and b) a variable combining responses from both sweeps, distinguishing among 0=Low (at both sweeps), 1=Moderate (at one sweep low and at the other high) and 2=High (at both sweeps).

In line with previous research on cultural capital (see Becker, 2011; De-Graaf et al., 2000; Hartas, 2011; Jaeger, 2011; Robson, 2009), I have chosen parent-child "shared reading" as a representation of the cohort-members' involvement in highbrow activity. Following this previous research, I considered the 'shared-reading' highbrow activity as a reference for the other selected home-centred activities.

Parent-child "shared creative activities": Parents in the MCS were asked to indicate how often they: "... draw, paint or make things with [… child's name]?" (NatCen, 2008a, p. 145, 2009a, p. 120). Specifically, this activity has been chosen for the current study to represent children's engagement in a more midbrow cultural activity. The responses were used to derive the following variables: a) the level of engagement at sweep 4, coded as 0=Low (no more than twice a month) or 1=High (at least twice a week); and b) a variable combining data from sweeps 3 and 4, coded as 0=Low (at both sweeps), 1=Moderate (low at one sweep, high at the other) and 2=High (high at both sweeps).

Joint indoor play: Parents were asked to indicate how often they "...play with toys or games indoors with [… child's name]?" (NatCen, 2008a,

p. 146, 2009a, p. 120). Here, too, responses were given on a 6-category scale but data needed to be grouped to create: a) a variable based on MCS4 data, indicating the level of engagement in joint indoor play, coded as 0=Low (no more than twice a month) or 1=High (once a week or more); and b) a variable combining data from sweeps 3 and 4, coded as 0=Low (at both sweeps), 1=Moderate (low at one sweep, high at the other) and 2=High (at both sweeps). Joint indoor play has been chosen as a manifestation of children's engagement in midbrow cultural activity.

Usage of electronic media: Cohort member's engagement with electronic media was chosen to represent a lowbrow activity. Parents were asked: "On a normal week day during term time, how many hours does [… child's name] spend watching television, videos or DVDs?" and "On a normal weekday during term time, how many hours does [… child's name] spend using a computer or playing electronic games outside school lessons?" (NatCen, 2008a, pp. 138–139, 2009a, pp. 112–113). I combined and summed up the responses to these two variables to indicate the child's overall media usage at each sweep. I then derived a binary variable utilising MCS4 data, to distinguish between 0=Low level of electronic media usage (up to 3 hours a day) and 1=High level of electronic media usage (3 hours a day or more). I also derived a categorical variable by combining MCS3 and MCS4 data. This was coded as: 0=Low (at both sweeps), 1=Moderate (low at one sweep, high at the other) and 2=High (at both sweeps).

In all 4 home-centred activities discussed here, the derived binary variable was used to explore the links between SES and participation in activities in the home environment. The categorical variable was included as

an independent variable in models investigating the effect of participation in home-centred leisure activities on children's academic performance.

3.4.6 Independent Variables Controlling for Children's Participation in OSA

As has been mentioned earlier in section 2.6, in answering research questions 2 and 3, this study attempts to explore the associations between children's academic outcomes and participation in each of the 11 types of out-of-school leisure activities discussed above[6]. Furthermore, the study attempts to assess whether, and to what extent, the relationships between children's academic development and each of these 11 OSA vary across the different SES levels (as measured by parental education and occupation levels and by family incomes). To achieve these goals, statistical models that take into account to joint effects of all 11 activities, on the educational outcomes of interest, must be created.

Two strategies can be taken to create such "joint effects" models and establish the "unique" association between each of the chosen 11 OSA and children's academic outcomes. The first strategy is to include a set of 11 variables, one for each from of OSA, in a single model. A second strategy is to produce a model that focuses on a particular OSA category, i.e. social-group, commercial-public or home-centred, by introducing the various activities that have been selected to represent the category while using indexes to control for those activities that the model is not focused on. For example, a model estimating the relationship between children's verbal

[6] i.e., attendance at, visits to and engagement in: after-school clubs, PA clubs, Enrichment clubs, art venues, cinemas, professional sport events, theme-parks/funfairs, shared reading, shared creative activities, joint indoor play and media usage.

performance at age 7 and participation in social-group activities, will comprise independent variables indicating children's attendance at after-school clubs, PA clubs and enrichment clubs, and two OSA indexes of which one captures children's participation in commercial-public activities and the other controls for their engagement in home-centred activities.

The first strategy is straightforward and makes it possible to estimate the association between a particular OSA and an academic outcome, while the effects of all other 10 activities on this outcome are statistically accounted for. However, in the context of the current study, this approach suffers a couple of drawbacks.

Firstly, introducing a set of 11 separate categorical and ordinal variables into models that also account for a range of socio-economic factors, family characteristics and other control variables (see below), will produce a large number of estimations (coefficients). As a result, the outputs from such models are complex and difficult to interpret and communicate. This issue may be of particular concern when interaction terms are introduced, that is, in models that not only explore whether participation in OSA is linked to children's academic performance, but also whether an association between a particular activity and an academic outcome varies by children's SES. An "index" model which reduces the number of estimations in the output could potentially ease the process of interpreting and communicating the results.

An additional implication of including a set of 11 separate OSA in a single model is that, in interpreting and discussing the results of such a model, it is difficult to maintain the conceptual framework that this study developed and that distinguishes between 3 categories of leisure OSA, i.e., social-group, commercial-public and home-centred activities. As has been

established in section 2.5 this categorisation is justified on the basis of the theories of social and cultural capital, and the particular characteristics of the activities included in each category. The "index" approach overcomes this disadvantage by making it possible to produce models that centre on a particular OSA category while also controlling for the other two OSA categories that are explored in this research.

A decision regarding which of these two modelling strategies should be preferred, however, must not be made solely on the grounds of clarity of interpretation and ease of communication. This decision should also consider whether one of the two strategies introduce major statistical advantages in terms of how well the model fit the data. The exploration of the two strategies involved two stages. Firstly, three indexes were derived as follows:

A social-group OSA index: an independent variable summarising the number of out-of-school club/class sessions a week cohort members attended at MCS4 and at MCS3. This included children's attendance at after-school clubs (at both sweeps), PA clubs (at both sweeps) and enrichment clubs (only at sweep 4). The scores on this index range from 0 to 22, where a higher score represent a greater number of clubs sessions between age 5 and 7.

A commercial-public OSA index: an independent variable summarising the number of places cohort members had visited in the 12 months prior to the MCS3 and the MCS4 interview. This included visits to the following places/venues: a) play, pantomime, music concert, circus; b) art gallery, museum or historical site; c) zoo, aquarium, wildlife reserve or farm; d) cinemas; e) live sport events; f) theme-parks or funfairs. The index's scores range between 0=none, and 12=all, at both sweeps.

A home-centred leisure index: an independent variable summarising the frequency of the cohort members' engagement in activities in the home environment. This included parents' responses at MCS3 and MCS4 as to how often they engage in the following activities with their child: tell stories; do musical activities; draw, paint or make things; play physically active games; play with toys or games indoors; and read with or to the child. Scores on this index range between 0 and 70, where higher scores represent greater engagement in home-centred activities.

At the second stage, a set of diagnostic models were produced to explore whether the two modelling strategies produce similar results, and if not, whether one approach is considerably better than the other. For each category of OSA, the diagnostic models tested the option of introducing a set of activities versus an activities index. An example of the diagnostic models is given in Table 3.3, which presents results from diagnostic models assessing the effect of a set of separate commercial-public activities vs. an index of commercial-public activities, on the estimation of children's verbal development. In Model 1 of Table 3.3 the SES and family factors are included, as well as the social-group and home-centred activities. In Model 2 of Table 3.3, the 4 commercial-public activities are introduced using a separate categorical variable for each of these activities. As can be seen, the introduction of this set of 4 commercial-public activities reduces the -2LL test result from 39495.90 in Model 1 to 39459.12 in Model 2 (36.77) and there is no significant change in the values of the coefficients. In Model 3 of Table 3.3 the set of separate commercial-public OSA is replaced by a commercial-public OSA index. From a comparison of the first and the third models it can be seen that here, too, the -2LL test result diminishes from 39495.90 in Model 1

to 39476.62 in Model 3 (19.28) and the coefficients remain relatively unchanged. A comparison of Model 2 and Model 3 shows that while the -2LL reduction is greater for the second model than for the third model, the difference is not large. This means that a model with a set of 4 separate categorical variables, one for each of the 4 different commercial-public activities, is better than an indexed model in terms of how accurately it can predict a child's verbal progress. Nevertheless, the differences between the "prediction" accuracy of Model 2 and Model 3 are relatively small. In addition, a comparison of the two latter models reveals a strong resemblance in the coefficients of the two models. This means that the associations between children's verbal progress and their SES, family characteristics, social-group OSA and home-centred activities remain similar regardless of whether the first or the second modelling strategy is taken.

The 2-stage diagnostic procedure detailed above has been conducted for the 3 OSA categories and against the 3 outcomes discussed earlier in section 3.4.1. The results, which are given in full in appendix 6 (pages 427-434) demonstrate trends similar to the ones shown by the above example: a) models with a set of separate activities are slightly better than "index" models and b) the coefficients are similar regardless of whether indexes or sets of separate activities are used.

Given the results of the diagnostic models, it has been decided to proceed with the "index" strategy. Although the diagnostic procedure showed that the "set" models are somewhat stronger statistically than the "index" models, the difference is small and the later presents practical and conceptual advantages. Moreover, the underlying trends hold when "index" models are used.

Table 3.3: Models assessing the effect of a set of separate commercial-public activities vs. an index of commercial-public activities, on the verbal outcome (N=11,019-11,017)

	Model 1: Club & home activities	**Model 2:** Club, home & public activities separate	**Model 3:** Club, home & public activities index
	Coeff'/S.E.	Coeff'/S.E.	Coeff'/S.E.
Child, parents and household factors			
Parental occupation (NS-SEC)			
Ref: Routine/Manual			
Intermediate	0.890** (0.27)	0.791** (0.27)	0.810** (0.27)
Managerial	1.461** (0.27)	1.321** (0.27)	1.311** (0.28)
Not working	0.085 (0.31)	0.132 (0.31)	0.153 (0.31)
Mother's working hours	-0.010 (0.01)	-0.012 (0.01)	-0.012 (0.01)
Parental education (NVQ)			
Ref: No formal qualification			
GCSE or equivalent	0.851 (0.46)	0.816 (0.46)	0.806 (0.46)
A-levels or equivalent	1.684** (0.38)	1.463** (0.38)	1.445** (0.38)
University degree or equivalent	2.936** (0.41)	2.588** (0.41)	2.604** (0.41)
Household's income			
Ref: Bottom quartile			
2nd quartile	0.650* (0.27)	0.539* (0.27)	0.530 (0.27)
3rd quartile	1.217** (0.31)	1.044** (0.31)	1.020** (0.32)
Top quartile	1.829** (0.35)	1.594** (0.35)	1.593** (0.35)
Gender			
Ref: Girl			
Boy	-1.376** (0.17)	-1.484** (0.17)	-1.472** (0.17)
Family characteristics			
Parenting composition			
Ref: Co-parent household			
Single-mother household	-0.231 (0.25)	-0.358 (0.25)	-0.369 (0.25)
Adults in household			
Ref: No			
Yes	0.331 (0.34)	0.363 (0.34)	0.364 (0.34)
Children in household			
Ref: One child			
Two children	0.127 (0.27)	0.104 (0.27)	0.106 (0.27)
Three or more children	-0.335 (0.29)	-0.297 (0.29)	-0.295 (0.29)
School type and educational measures			
School fee applied?			
Ref: No			
Yes	2.617** (0.49)	2.530** (0.49)	2.532** (0.49)
Absenteeism			
Ref: Never			
Rarely	-0.891** (0.20)	-0.932** (0.20)	-0.922** (0.20)
Frequently	-2.343** (0.22)	-2.385** (0.22)	-2.375** (0.22)
Child's verbal test score at age 5	0.265** (0.01)	0.259** (0.01)	0.258** (0.01)
Attendance at out-of-school clubs			
Ref: Never			
After school clubs - sweep 3	0.080 (0.39)	0.051 (0.39)	-0.005 (0.39)
After school clubs - sweep 4	-0.158 (0.24)	-0.189 (0.24)	-0.177 (0.24)
After school clubs - both sweeps	-0.987** (0.36)	-1.035** (0.36)	-1.027** (0.36)
Sport clubs - sweep 3	-0.244 (0.34)	-0.420 (0.34)	-0.447 (0.34)
Sport clubs - sweep 4	1.017** (0.25)	0.890** (0.25)	0.860** (0.25)
Sport clubs - both sweeps	0.960** (0.25)	0.684** (0.25)	0.634* (0.25)
Enrichment clubs - sweep 4	0.775** (0.18)	0.680** (0.18)	0.679** (0.18)
Out-of-school clubs index			
Engagement in home-centred activities			
Ref: Low			
Shared reading - moderate	0.270 (0.39)	0.231 (0.39)	0.210 (0.39)
Shared reading - high	0.409 (0.40)	0.332 (0.40)	0.289 (0.40)
Shared creative activities - moderate	-0.214 (0.28)	-0.269 (0.28)	-0.287 (0.28)
Shared creative activities - high	-1.126** (0.31)	-1.181** (0.31)	-1.205** (0.31)
Shared indoor games - moderate	0.565* (0.26)	0.614* (0.26)	0.614* (0.26)
Shared indoor games - high	0.813* (0.33)	0.942** (0.33)	0.955** (0.33)
Media usage - moderate	-0.466 (0.60)	-0.516 (0.60)	-0.407 (0.60)
Media usage - high	-0.290 (0.62)	-0.289 (0.62)	-0.166 (0.62)
Participation in commercial-public activities			
Ref: Never			
Visits to art venues - sweep 3		0.709* (0.35)	
Visits to art venues - sweep 4		0.795** (0.24)	
Visits to art venues - both sweeps		1.156** (0.24)	
Visits to the cinema - sweep 3		0.295 (0.41)	
Visits to the cinema - sweep 4		0.480 (0.31)	
Visits to the cinema - both sweeps		0.975** (0.28)	
Visits to sport events - sweep 3		-0.744* (0.34)	
Visits to to sport events - sweep 4		0.090 (0.23)	
Visits to to sport events - both sweeps		0.482 (0.31)	
Visits to theme parks - sweep 3		0.381 (0.30)	
Visits to theme parks - sweep 4		0.164 (0.29)	
Visits to theme parks - both sweeps		0.441 (0.25)	
Commercial-public activities index			0.305** (0.05)
Constant	32.09** (1.01)	31.50** (1.03)	31.43** (1.01)
Diagnostics			
Student Level Variance	73.22 (1.00)	72.85 (0.99)	72.92 (0.99)
Ward Level variance	6.24 (0.69)	6.11 (0.68)	6.40 (0.70)
-2LL	39495.90	39459.12	39476.62
-2LL Reduction		36.77	19.28

To summarise, a decision was taken to use a social-group OSA index to control for the effect of engagement in social-group OSA in models estimating the associations between the 3 academic outcomes of interest and attendance at home-centred activities or commercial-public OSA. A commercial-public index is used to control for the effect of participation in commercial-public OSA in models fitted to estimate the associations between academic outcomes and attendance at social-group OSA or home-centred activities. A home-centred leisure index is used to control for the effect of children's engagement in home-centred activities in models estimating the associations between academic outcomes and attendance at social-group OSA or commercial-public OSA.

3.4.7 Other Control Variables

The following independent variables are also included in the present study:

School type: A justification for including "school type" in models for assessing students' academic performance draws on research showing that students in private schools tend to outperform students in state schools, after controlling for their SES (Dronkers & Robert, 2007; Schagen & Schagen, 2003) and that schools' performance is linked to geographical factors (Bell, 2003; Rasbash et al., 2010) . This is relevant for the current study because it means that the type of school attended by the MCS children may be associated with their academic performance. Thus, controlling for the "school type" in which the cohort members are educated should allow a greater level of certainty that there are direct links between their SES and their academic performance. For the purpose of the current analyses, therefore, schools were

distinguished according to whether or not they charged a parent fee. This resulted in variables coded as 0=No school fee applied or 1=Yes, school fee applied.

Absenteeism: The decision to include a variable controlling for children's absenteeism is based on previous research which has demonstrated a significant link between high levels of students' absenteeism and poor academic outcomes (Reid, 2003). In addition, it has recently been suggested that the impact of students' absenteeism is an important factor which research exploring factors influencing academic performance has often failed to take into account (Ready, 2010). I decided to follow this recommendation and derived a variable that captures absenteeism from school, as measured at age 7. This variable was coded in three categories: 0=Never absent, 1=Rarely absent (less than once a month) and 2=Frequently absent (at least once a month).

3.4.8 Independent Variables that were dropped from the Research

Additional variables were considered for the present research but were dropped after the first stages of data analysis. These were:

The rural-urban classification: The MCS provides, for each of the 4 UK countries, a measure differentiating geographical areas according to their population size and density. Preliminary analyses that were undertaken as part of this research included these rural-urban measures in models estimating the association between SES and participation in the discussed leisure OSA. Since these measures neither showed significant relation to the

outcomes of interest nor significantly improved the explanatory power of the models, they were dropped from later analyses.

Ethnicity: At the early stages of the research, a variable indicating cohort members' ethnicity was included in the fitted models. These analyses showed that ethnicity is associated with participation in OSA and also is correlated with the academic performance of the cohort members. However, the analyses also found differences among ethnic groups in terms of their engagement in these activities. Since the main results did not change when "ethnicity" was included in the models or excluded from them, as well as for the sake of parsimony, I decided to drop this variable from the final models. This decision also allowed me to maintain the chosen conceptual framework, as the inclusion of ethnicity would have required additional empirical and theoretical considerations to be addressed.

3.5 Statistical Techniques

3.5.1 Multilevel Regression Models

Introduction to Multilevel Regression Modelling and the Rationale for using this Technique in the Present Study

Regression models constitute a powerful statistical tool because they enable researchers to predict a particular outcome (dependent variable) on the basis of a known set of characteristics (independent variables) (Brace, Kemp, & Sneglar, 2009; Rabe-Hesketh & Skrondal, 2008). In addition, these techniques allow researchers to estimate the unique effect of a specific

characteristic on the outcome of interest, while other relevant characteristics are controlled (Brace et al., 2009).

In the present study, fitting regression models would make it possible to explore whether SES is linked to children's participation in OSA, in addition to estimating the associations between attendance at OSA and the academic performance and development of the sampled children, while accounting for their socio-economic background. Likewise, regression models allow the present research to evaluate which socio-economic factors are most strongly linked to children's participation in OSA and to their academic outcomes. The technique, therefore, is well suited to the current study as it will enable all the three research questions outlined earlier to be answered.

The regression technique, however, requires several assumptions to be satisfied. One key assumption is that the analysed data come from a random sample, and that therefore the sampled participants (or observations) are independent (Steele, 2008).

In the social sciences, however, this assumption is often violated because individuals tend to be clustered in groups which share common characteristics (Goldstein, 2003; Rasbash et al., 2000; Steele, 2008). A good example of that phenomenon is found in educational studies in which researchers select students in different classes to explore their academic achievement. It could be argued that in such studies the participating students are not independent since they are grouped in classes and are thus subjected to similar influences (e.g., classroom teacher, classroom physical conditions). This clustering effect is important because when two or more of the sampled students come from the same class they may be more alike, on

average, than students coming from different classes. Ultimately, this means that characteristics of the class, in addition to characteristics of the students, may affect the investigated outcome, namely the students' academic achievement.

The MCS, from which data for the present study were extracted, is an example of a survey containing hierarchical data which violates the independency assumption underlying the conventional single-level regression method. The reason is that, at the MCS's first sweep, participants were selected if, at 9 months old, they resided in one of 398 wards across the UK. This use of geographical areas as the primary sampling unit (PSU) implies that observations in the MCS are not independent (Jones & Ketende, 2010, p. 7). It could be further argued that, apart from being clustered at the PSU level, cohort members' transition to primary school at sweep 3 created an additional level within the MCS due to participants' grouping within schools.

Technically, clustered data such as those in the MCS can be analysed using conventional single-level regression models without accounting for the unequal probabilities of data selection. However, ignoring the complex structure of the data could produce undesirable consequences (Leeuw & Meijer, 2008; Rasbash et al., 2000; Steele & Goldstein, 2007; Steele, 2008).

Specifically, a failure to properly model hierarchical data could produce underestimated standard errors and other misspecified tests (i.e., p-values, confidence intervals) which consequently could lead to incorrect conclusions as to whether or not to reject the null hypothesis (Leeuw & Meijer, 2008; Moerbeek, Van-Breukelen, & Berger, 2008; Steele, 2008), and as

to the direction of association between the regressors and the outcome (AQMeN, 2010a, pp. 16–17).

In the present research, the implications of analysing data drawn from the MCS without statistically correcting for the clustering effect could mean, for instance, a rejection of the null hypothesis when in fact there is no "real" effect of the chosen predictors on the outcome of interest. More specifically, such analysis would create the risk of concluding that there is a socio-economic disparity in children's participation in OSA, or that participation in OSA affects children's academic performance and their academic progress, when in fact these effects should be ascribed to grouping of the data or to chance.

Several statistical methods enable researchers to account for variation across clusters. One such method is to fit a conventional regression model in which separate terms, in the form of dummy variables, are incorporated for each of the clusters (Rasbash et al., 2000; Steele, 2008). However, as Rasbash et al. (2000, p. 7) explain: "This procedure is inefficient, and inadequate for the purpose of generalisation" because it involves treating the clusters as coming from a non-random sample, a situation creating generalisability issues. Moreover, such models may suffer from low statistical power and the results could be difficult to interpret, given the high volume of estimations they produce. Indeed, in relation to the present study, this technique would give rise to a serious technical and inferential problem since it would require the introduction of nearly 400 dummy variables into each model. This method, therefore, is nonoptimal in the current context.

Alternatively, clustered data such as those coming from the MCS can be properly analysed by calculating robust standard errors (Hansen et al.,

2010, pp. 79–80; Williams, 2006). The calculation of robust standard errors allows the researcher to incorporate both clustering effects and weights when computing the regression's standard errors, hence resulting in more accurate estimations than would be achieved by ignoring these elements. This method, therefore, could be very useful for analysing the MCS because it can help to overcome the difficulty introduced by the data structure. Moreover, using this technique reduced the risk of falsely rejecting the null hypothesis without compromising the fitted models' statistical power, as would have been the case if a set of dummy variables had been introduced to capture the PSU effect.

While calculating robust standard errors generates more precise estimations than would be achieved by applying the conventional regression technique, this method, too, has limitations. This is because it neither corrects coefficients calculated as part of the regression estimations, nor allows researchers to evaluate the extent to which variance in the dependent variable is due to the characteristics of the grouping, as distinct from factors related to the sampled individuals.

In the context of the current research, this means that calculating robust standard errors would reduce the threats involved in misspecified models; however, it would not allow estimation of the degree to which the difference in children's attendance at OSA is attributable to features of their school or neighbourhood, rather than to their own or their family's SES. Similarly, regressions fitted through this procedure would not include a parameter approximating the extent to which the residual variance in cohort members' academic performance or development is attributable to the place where they reside or are educated.

A third method for dealing with hierarchical data is the multilevel technique (Goldstein, 2003). This technique addresses the limitations outlined above. Multilevel regression models relax the independency assumption and provide an efficient means for modelling the effect of clustering within the data. In such models, residuals are calculated for each level of the data, as opposed to the one error term calculated in conventional single-level regressions (Steele, 2008), giving an estimation of the variance in the dependent variable for each of the included levels.

So, for example, in a two-level regression equation, both the level-1 (individuals) variation and the level-2 (clusters) variation are taken into account in the process of calculating the test statistics. This procedure generates more precise estimations than would be produced by a single-level model, besides allowing researchers to calculate a variance partitioning coefficient (VPC), in order to estimate how much of the total variance is due to the level-2 clusters.

In the present study, therefore, I preferred the multilevel approach to the alternatives because it enables me to incorporate the unequal probability of selection into the analyses, as well as to estimate the extent to which variance in the dependent variable (whether this relates to participation in OSA [research question 1] or academic outcome [research questions 2 and 3]) is due to the "grouping" of cohort-members (i.e., the area in which they live). In addition, the multilevel technique has been favoured since it allows me to explore the extent to which variance across the sampling "groups" is changed by the introduction of different independent variables.

Also, I decided not to incorporate the MCS's weights into these analyses. The reason is that many of the data used to derive these weights are

included in the present study's models as independent variables, meaning that the addition of the weights could have led to misestimating the regression statistics. The sample's strata, by contrast, were initially introduced to the models as a set of dummy variables to explore their effect on both participation in OSA and academic outcomes. However, these controls were removed since no significant effect was found following their inclusion.

The decision to analyse the data in this research by using multilevel models required selection of the level-2 units for the planned analyses. As has been described earlier, two options were identified: the PSU (i.e., wards) or the schools in which cohort members are educated. The grouping of cohort members within schools is relevant for the present study, especially in relation to research questions 2 and 3, since variation across schools, not just individual factors, could affect children's academic performance and academic development. A failure to account for that school effect could lead to incorrect inferences in regard to the association between participation in OSA and academic outcomes.

Empirically, however, an exploratory analysis of the candidate level-2 units showed that, at MCS3, there were only 1.7 students per school on average (minimum per school=1, maximum per school=28). This presented a problem since, according to Hox (2010), approximately 50 clusters with 5 observations per cluster (at a minimum) are required for multilevel models to produce valid estimations while maintaining statistical power.

The option of using the MCS's PSU as level-2 units was also explored after obtaining data showing that, on average, 37 cohort members per ward, clustered in 338 wards, are included in the working sample (minimum per

ward=5, maximum per ward=257). Therefore, multilevel analyses in which the PSUs are used to model the level-2 variance should maintain a good statistical power.

But there are several other justifications for using the MCS's PSU as the level-2 units in the present study. Firstly, the majority of published work on cohort members' academic performance has used the PSU variable to control for MCS design effects. Secondly, it could be claimed that the PSUs are good enough approximations of schools' effects, since cohort-members would typically (though not always) attend schools located within the wards in which they live; or even that the PSUs are better level-2 units because they might control for locality effects that are not captured at the school level and hence allow a more rigorous account of the geographical level variation. This may be particularly relevant to research question 1, since children's home localities might have an effect on the probability of their attendance at OSA.

For instance, the provision of services such as clubs and other forms of organised group activities may be more developed in certain localities than in others, providing children in these areas with greater opportunities for participation. Likewise, there may be wards in which the discussed services are more accessible and affordable than in others, or in which parents feel more confident about sending their children to public places during the afternoon. Potentially, such "locality level" characteristics can play an important role in determining the likelihood of children's participation in OSA, regardless of their SES. And since children in the MCS are clustered by wards, it is important to take these wards' effects into consideration while assessing their participation (or non-participation) in OSA.

Based on the discussed rationales and empirical information, I decided to use the PSUs as the level-2 units in the present study. It should be noted, however, that some cohort members may have changed their place of residence during the course of the study. In such cases, their PSU indicator would not match their place of residence in the consecutive sweeps. Indeed, a preliminary analysis conducted as part of the present research showed that approximately 10% of the cohort children migrated to a different home address between sweep 3 and sweep 4.

There are several approaches to fitting multilevel models. Multilevel regressions can be generally calculated by allowing the clusters' intercepts to vary (random intercept models), allowing the clusters' slopes to vary (random slope models), or by allowing both the intercepts and slopes to vary (Goldstein, 2003; Rabe-Hesketh & Skrondal, 2008). The choice of methods depends on the research questions as well as on the assumed variations across the clusters and the predicted effects of this variation on the dependent variable/s.

For example, fitting random intercept models would typically be the method of choice in research exploring the effect of the sample's clusters on the outcomes of interest (while the model's independent variables are held constant), or when a need to control for the sample design effect arises in research based on hierarchical data. Conversely, random slope models would be preferred if it were believed that the effect of the included independent variables on the outcome of interest differed across the sample's clusters.

However, there are also practical reasons for selecting one multilevel technique in preference to the other. For instance, random intercept models

could be less complicated to interpret, and more easily communicated to various audiences, than results coming from random slope models.

Since the present study is not primarily designed to explore geographical differences in attendance at OSA, or geographical effects on children's academic outcomes, random intercept models were favoured over random slope models.

The next sections present a number of additional methodological issues that were addressed prior to fitting the selected multilevel regression models, as well as discussing further particularities of these models.

General Requirements for Regression Models

Regression models can give misleading results if the data are not properly fitted. One potential source of biased estimations is the existence of extreme values within the data. This is because observations unusually distant from the rest of the data (for example, over 3 standard deviations away from the mean) can have excessive influence on the regression's estimations. In the present study, an examination of extreme values has shown that the percentage of such values ranged between 4% and 6% of the total number of observations. Since such a low percentage of outliers is unlikely to dramatically distort the regression's statistics, a decision was taken to retain these items in the final models.

Another issue that has been addressed at an early stage of this research is whether the selected independent variables are likely to create a risk of multicollinearity. Such a problem can arise if two or more of the independent variables that the researcher planned to include in a particular model are highly correlated (Brace et al., 2009). Potentially, multicollinearity

could cause an overestimation of the standard errors, a situation that can lead to an interpretation biased towards the null hypothesis. The cut-off point for determining that a model is at risk of multicollinearity is flexible; however, it is recommended that the inclusion of independent variables that inter-correlate at r=0.8 or higher be avoided (AQMeN, 2010b, p. 33).

To verify that the analyses intended for the present study are not compromised by a multicollinearity effect, a correlation matrix was derived (see Appendix 1). This investigation yielded results of r=0.645 or less, meaning that the degree of inter-correlation between the enquired independent variables is tolerable, and that therefore the analytical plan can proceed using the intended variables.

Multiple Linear Multilevel Regressions

Multiple linear multilevel regressions were fitted in the present study to explore the links between participation in OSA and the academic performance of children in dissimilar SES groups ("performance"models) as well as the academic development the children achieved from age 5 to 7 ("developmental" models). Linear regressions, whether single-level or multilevel, are suitable for continuously normally distributed dependent variable(s) (Field, 2009, pp. 198–199). This preliminary requirement, as has been shown earlier in section 3.4.5 (p.152), is satisfied by the variables chosen to represent cohort-members' academic performance in this study.

The general formula for a single-level multiple regression model predicting the values of a dependent variable from a set of independent variables can be expressed as follows (adapted from AQMeN, 2010b, p. 10):

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots \beta_n x_n + e$$

In this model, Y is the predicted outcome, β_0 is the intercept, β_1 to β_n are the coefficients ascribed to the regressors x_1 to x_n (correspondingly) and e is an error term (residual) with an assumed mean value of 0. The regression's beta coefficients are calculated using an ordinary least squares (OLS) equation, which minimises the sum of squared differences between the observed and predicted values of Y, hence creating a "line of best fit".

Random intercept models for continuously normally distributed outcomes are an extension of the conventional single-level regression technique. Commonly, such multilevel regressions are fitted in two main stages. At the first stage, a null model is fitted to estimate the variation in the dependent variable across the different clusters, without the effects of other explanatory variables. The null model serves as a starting point from which to explore the variance reduction in consecutive models. At the second stage, a complete model is created (sometimes in several steps) by adding independent variables (Goldstein, 2003; Snijders & Bosker, 1994; Steele, 2008).

The present study adopted the described two-stage approach. In each analysis, a "null" model was first fitted, making it possible to estimate the variation in the cohort members' academic outcomes across wards, when no independent variable is included. This "null" model may be expressed as:

$$Y_{(\text{academic performance})ij} = \beta_0 + u_{0j} + e_{ij}$$

In this model, $Y_{(\text{academic performance})}$ is the estimated test score of student *i* in ward *j*, β_0 is the overall mean score across wards (a constant term), u_{0j} is the effect of ward *j* on the academic outcome (level-2 random part), and e_{ij} is a student residual (level-1 random part) (adapted from Leckie, 2010a, p. 5).

At a second stage, multiple multilevel regressions were fitted containing the independent variables discussed earlier. The multiple multilevel regression formula is:

$$Y_{(\text{academic performance})ij} = \beta_0 + \beta_1 x_{1ij} + \beta_2 x_{2ij} + \ldots + \beta_n x_{nij} + u_{0j} + e_{ij}$$

– where Y, the estimated performance score and developmental score of a particular cohort member$_{(i)}$ in a particular ward$_{(j)}$, comprises an intercept term (β_0) plus the sum of each independent variable's coefficient (represented by β_1 to β_n) multiplied by the related variable's value (represented by x_{1ij} to x_{nij}), the random effect of wards on the academic outcome of interest (u_{0j}), and the student's residual (e_{ij}).

The analyses were carried out using the xtmixed commands in Stata v.12 (Rabe-Hesketh & Skrondal, 2008). VPC were calculated as follows (Leckie, 2010a, p. 7):

$$\text{VPC}=\text{level 2 variance}_{[\text{wards}]}/(\text{level 2 variance}_{[\text{wards}]}+\text{level 1 variance}_{[\text{students}]})$$

R^2s were computed using the 'mlt' package (Mohring & Schmidt, 2012) based on Snijders' and Bosker's (1994) formula. It should be noted that in multilevel models, R^2s estimating the proportional reduction of prediction error are calculated separately for each level in the model (Mohring & Schmidt, 2012;

Recchia, 2010; Snijders & Bosker, 1994). This is because applying the concept of R^2 from conventional single-level regression analysis directly to multilevel models presents unwanted results such as negative R^2 or an R^2 that decreases when new independent variables are introduced to the model (Recchia, 2010; Snijders & Bosker, 1994).

Binary Logistic Multilevel Regressions

When an outcome of interest is discrete, rather than continuous, linear regression is not the appropriate technique with which to analyse it (Field, 2009, pp. 265–266). In the present study, the exploration of the associations between SES and participation in OSA (research question 1) involved mostly models in which the outcome is measured by binary dependent variables which have only two categories; for example, cohort member attends an OSA (category 1) vs. cohort member doesn't attend an OSA (category 2).

Binary outcomes, however, can be analysed by fitting binary logistic regressions in which the normality and linearity assumptions are relaxed (Rabe-Hesketh & Skrondal, 2008, pp. 231–233; Rasbash et al., 2000, p. 99). In binary regression models, the probability that an event/person will belong to one category rather than the other is estimated (AQMeN, 2010b, pp. 34–35). For the purpose of the present research, a random intercept null model for binary dependent variable can be written as (adapted from Leckie, 2010b, p. 5):

$$\text{logit}(P_{ij}) = \log(P_{[\text{participation}]ij}/1\text{-}P_{[\text{participation}]ij}) = \beta_0 + u_{0j}$$

In this model, the log transformation of a child's predicted probability of participation in OSA (P_{ij}) comprises a fixed intercept term (β_0) and a random effect u_0 which is specific to ward j. A binary random intercept model with independent variables (x_{1ij} to x_{nij}) can therefore be written as (adapted from Leckie, 2010b, p. 10):

$$\text{logit}(P_{[\text{participation}]\,ij})=\log(P_{[\text{participation}]ij}/1\text{-}P_{[\text{participation}]ij})= \beta_0 + \beta_1 x_{1ij} + \beta_2 x_{2ij} +\ldots+ \beta_n x_{nij} + u_{0j}$$

VPCs for the binary multilevel regressions were calculated as follows (adapted from Leckie, 2010b, p. 18):

$$\text{VPC}=\text{level 2 variance}_{[\text{wards}]}/(\text{level 2 variance}_{[\text{wards}]}+3.29)$$

Note that, when calculating the VPC of binary models, the level 1 variance is equal to 3.29 because this value is the approximated standard logistic distribution variance (AQMeN, 2010a, p. 168). The analyses were carried out using the xtmlogit commands in Stata v.12 (Rabe-Hesketh & Skrondal, 2008, pp. 231–254).

3.5.2 Ordinal Logistic Regressions

Ordinal regressions can be seen as an extension of the binary models described in the previous section. The difference is that, while a binary regression enables researchers to estimate the probability of being in one out of two groups or conditions, ordinal regressions make it possible to estimate the odds of being in one out of several meaningfully ordered categories.

A standard technique for exploring ordinal dependent variables is by fitting "proportional-odds" models (Hedeker, 2008). In "proportional-odds" models, the regression slopes (beta coefficients) of all included independent variables are assumed to be parallel (Williams, 2006). Often, however, the parallel slopes assumption is violated and thereby the fitted model may be misspecified (Hedeker, 2008; Williams, 2006). This can lead to incorrect inferences in cases where the differences in the probabilities of a specific independent variable across the various values/levels of the dependent variable are obscured.

Exploratory ordinal analyses carried out at an early stage of the present research showed that, indeed, the fitted models violated the parallel slope assumption, meaning that the "proportional-odds" technique is not appropriate for the data.

One option for dealing with a violation of the parallel lines assumption is to collapse an ordinal scale into a dichotomous variable which can be analysed using binary models. This procedure has the benefit of simplicity since results coming from binary models are often straightforward, intuitive and easy to interpret. However, the reduction of data comes at the cost of discarding potentially valuable information.

Another possible way to overcome the issue of parallelism is by applying a non-ordinal alternative: for example, a multinomial model. The multinomial option allows the analyst to keep the original categories; however, results coming from such models could be difficult to interpret.

An alternative solution for analysing ordered outcomes in models that fail to satisfy the parallel lines assumption is to apply the partial proportional odds technique (Hedeker, 2008; Williams, 2006). In a partial

proportional odds model, similar coefficients for all levels of the dependent variable are fitted for independent variables that meet the parallelism requirement, while, in the case of independent variables that violate that requirement, the model allows the coefficients to differ across the diverse values of the dependent variable (Williams, 2005, 2006). This flexibility results in more accurate estimations of the outcome of interest and therefore reduces the risk of incorrect inferences.

An equation of a partial proportional odds model in which the coefficients for independent variables X1 and X2 are fixed, but the coefficient for X3 is not, can be written as follows (adapted from Williams, 2006, p. 56):

$$P(Y_i > j) = \frac{\exp(\alpha_j + \beta_1 X1_i + \beta_2 X2_i + \beta_{3_j} X3_i + \beta n X n_i)}{1 + [\exp(\alpha_j + \beta_1 X1_i + \beta_2 X2_i + \beta_{3_j} X3_i + \beta n X n_i)]}, \mathrm{j} = 1, 2, ..., \mathrm{M} - 1$$

In this model, the probability of an event/person belonging to one category rather than to the other categories is estimated. For instance, a model can be fitted to estimate the association between parents' working hours and cohort members' frequency of participation in OSA, as measured by 4 ordered categories: 1=very rarely, 2=rarely, 3=frequently and 4=very frequently. In this case the regression model contrasts category 1 with categories 2,3,4; categories 1&2 with categories 3&4; and categories 1,2,3 with category 4. This procedure generates either positive coefficients which indicate that the cohort member is more likely to be in a higher category with an increase in his or her parents' working hours, or negative coefficients which mean the opposite.

One weakness of the partial proportional odds technique is that it produces a greater number of estimations than a standard ordinal regression

and so the interpretation is less straightforward. A second disadvantage is the lack of a multilevel version of the partial proportional odds method in statistical software such as Stata and SPSS.

Given the potential solutions described here for the violation of parallelism, and the limitations associated with these solutions, a decision was taken to: a) collapse a number of ordered dependent variables aimed at exploring research question 1 into dichotomous variables, and b) proceed with fitting a single-level partial proportional odds regression for ordered dependent variables, in which case the parameters were calculated using a combination of the "gologit2" and "svy" commands in Stata v.12.

While the "gologit2" command relaxes the parallel lines requirement (Williams, 2006), the "svy" commands allow the clustering and stratification elements of the data to be accounted for in computing the standard errors and related tests (Hansen et al., 2010).

PART 2 -

An Exploration of the Links between SES, Participation in OSA and Academic Performance of British School-age Children

Chapter 4 – Exploring the Associations between SES and Participation in Leisure OSA

4.1 Introduction

Chapter 4 addresses research question 1: Is there a socio-economic disparity in children's participation in OSA? In trying to answer research question 1, the present study has the following objectives:

- To explore the question of whether 7-year-olds' likelihood of participation in leisure OSA varies by SES, as measured by their parental occupation status, education level and incomes;
- To provide rigorous empirical evidence on the associations between SES and 7-year-olds' participation in three distinguished categories of leisure OSA: a) social-group, b) commercial-public, and c) home-centred;
- To offer a socio-cultural explanation for dissimilarities in the participation of 7-year-olds from various SES groups in the three discussed OSA categories.

4.2 Variables and Analytic Strategy

Dependent Variables

The dependent variables of interest to Chapter 4 consider children's participation in, and engagement with, different types of leisure OSA (see sections 3.4.2-3.4.4, pp. 143-151). The first set of dependent variables focuses on 7-year-olds' attendance at social-group OSA, including participation in: 1) After-school clubs; 2) Sport and physical activity (PA) clubs (or classes); 3)

Enrichment clubs (or classes); and 4) The frequency of participation in social-group OSA.

The second set of dependent variables relates to children's participation in commercialised/public OSA, including: 5) Attendance at art venues; 6) Visits to the cinema; 7) Spectatorship of live professional sport events; and 8) Visits to theme-parks and funfairs.

The last set of dependent variables examines engagement in home-centred activities, including: 9) Engagement in shared reading activities; 10) Engagement in shared creative activities; 11) Engagement in joint indoor play; and 12) Usage of electronic media.

Independent Variables

The independent variables of Chapter 4 concern the following SES characteristics: 1) Parents' occupational status (NS-SeC); 2) Parents' educational qualifications; and 3) Household income (weekly average).

An additional set of independent variables was used to account for possible confounding effects. That included: 4) Mother's working hours; 5) Child's gender; 6) Parenting composition; 7) Other cohabiting adults; 8) Number of children in the household; and 9) Frequency with which cohort member meets his/her grandparents.

Analytic Strategy

Towards the aims outlined for Chapter 4, data drawn from MCS4 were analysed using binary and ordinal regression models. The binary analyses were carried out within a multilevel framework which made it

possible to control for the MCS complex sample design, as well as to distinguish the impact of individual characteristics from the effects of the localities where the cohort members live on the likelihood of participation in the OSA of interest. The ordinal model was also estimated using a correction scheme which allowed adjustment for the sample's differing probabilities of selection (through the "svy" commands in Stata), and by using the "Partial Proportional Odds" technique.

4.3 Results

4.3.1 Participation in Social-Group OSA

The present section investigates whether children in dissimilar SES groups differ in their likelihood of participating in social-group OSA, namely after-school clubs and PA and enrichment out-of-school clubs. In addition, the section explores whether there are differences among children in different SES groups in the extent to which they participate in social-group OSA.

Before presenting the results of these investigations, Figure 4.1 displays the percentage of children who attended each of the out-of-school clubs of interest at age 7. The figure shows that, among the different clubs, physical activity clubs were the most frequently visited premises, with 71% of the 7-year-olds attending them outside school hours at least once a week.

The attendance rate at enrichment clubs comes second with nearly 43% of the cohort children reported to have attended such a club once a week

or more often. Finally, the figure shows that roughly 1 in 5 (22%) of the 7-year-olds attended after-school clubs.

Figure 4.1: Participation rates of 7-year-olds in social-group OSA, by number of days a week (weighted, N= between 12,148 and 12,364)

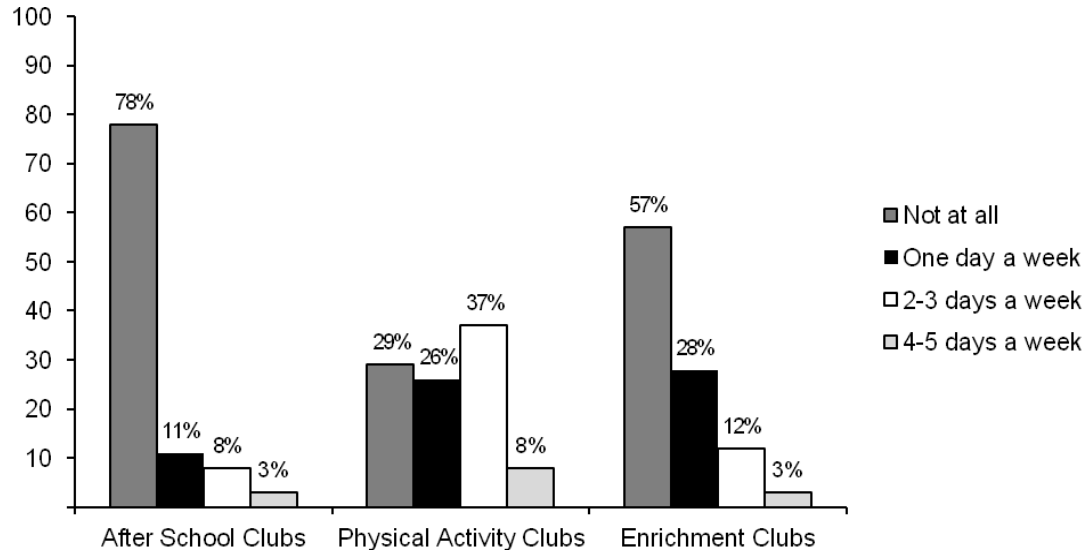
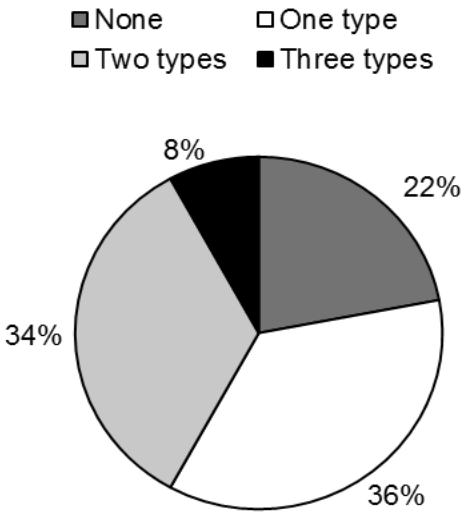


Figure 4.2 displays the variety in children's participation in the three investigated OSA. It shows that about 22% of the children had not attended any of the clubs when they were 7 years old. By contrast, the majority of the children participated in either one (36%) or two (34%) of these out-of-school clubs/classes, and a minority (8%) attended all three types of clubs.

Figure 4.2: Attendance rates of 7-year-olds in social-group OSA, by how many types of clubs are attended (weighted, N= between 12,148 & 12,364)

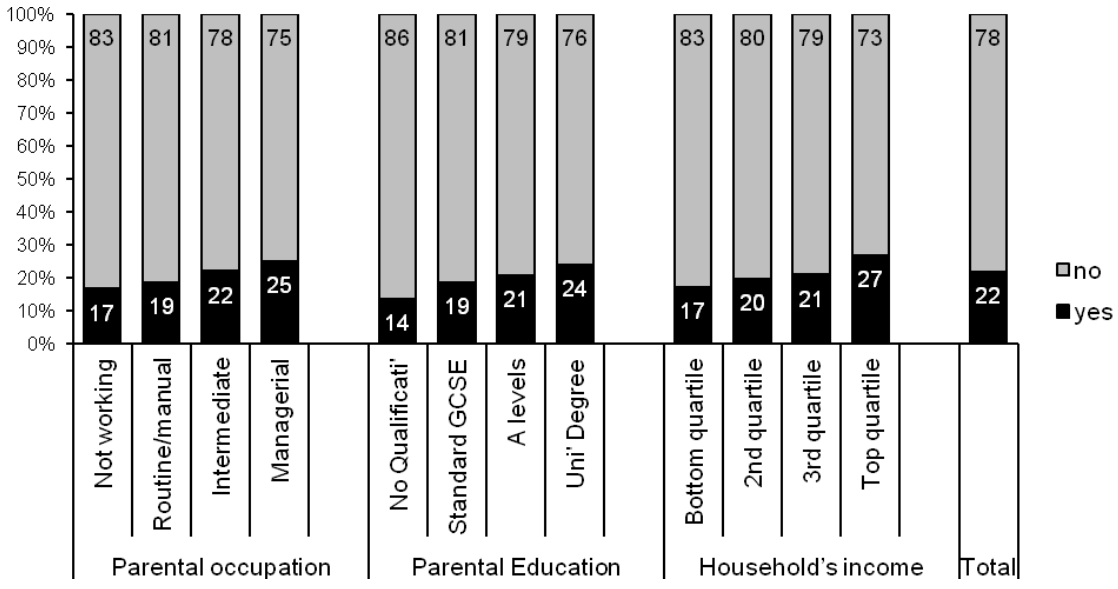


Participation in After-School Clubs among Children from Different SES Groups

This section presents the results from a series of models exploring whether British 7-year-olds' participation in after-school clubs varies by participants' SES.

Figure 4.3 breaks down the percentage of attendance at after-school clubs by the three SES factors of interest, namely parental occupation, education and income levels. The figure shows that the rates of children's participation in after-school clubs differ by their parents' SES. For instance, 17% of the children who live in homes where both of the parents are not in work attended such clubs compared to 25% of those who grow up with at least one parent working in a managerial or professional job.

Figure 4.3: 7-year-olds' participation rates in after-school clubs, by SES (weighted, N= between 12,148 and 12,364)



The trend is similar in relation to parental education: among children of parents with no formal qualifications, 14% attended after-school clubs compared to 24% of the 7-year-olds who live with at least one parent who is educated to university level. Family incomes also seem to be associated with the rate of attendance at after-school clubs: 27% of the children who live in the 25% highest income earning households attended after-school clubs, whereas among their counterparts from the lowest 25% income earning families, only 17% went to these clubs.

Table 4.1, next, displays the outcomes of binary multilevel analyses undertaken to explore the effect of socio-economic factors on the likelihood of participation in after-school clubs among 7-year-olds. These models made it possible to estimate the "net" effect of each the three SES factors of interest on the probability of participation in after-school clubs, controlling for other individual-level characteristics.

Model 1 of Table 4.1 is a constant-only model (null model). The null model gauges the variation in participation in after-school clubs across the sample's primary "grouping" units, namely, electoral wards. The fit of this model is useful in several ways. Firstly, such a model allows the estimation of whether the proportion of children who attend after-school clubs varies across localities, when no predictors are present. Also, fitting a null model enables the setting of a "benchmark" and investigation of whether the introduction of different independent variables accounts for some of the variance at the locality level. Finally, the use of a "ward identifier" in the "baseline" allows me to control for the impact of unobserved characteristics at the locality level on the odds of participation in after-school clubs.

Table 4.1: Multilevel binary regression models estimating the effect of SES on the likelihood of attendance at after-school clubs at age 7 (*p<0.05, **p<0.01)

	Model 1 Coeff'	SE	**Model 2** Coeff'	SE	**Model 3** Coeff'	SE
Constant	-1.323**	0.035	-1.968**	0.130	-2.036**	0.158
Child, parents and household factors						
Parental occupation						
Ref: Routine/manual						
Intermediate			0.128	0.077	0.119	0.077
Managerial			0.207**	0.077	0.184*	0.077
Not working			0.119	0.094	0.100	0.095
Mother's working hours			0.018**	0.002	0.017**	0.002
Parental education						
Ref: No qualification						
GCSE			0.181	0.135	0.216	0.136
A-levels			0.270*	0.111	0.296**	0.112
University degree			0.229*	0.117	0.264*	0.118
Household income						
Ref: Bottom quartile						
2nd quartile			0.025	0.078	0.038	0.079
3rd quartile			0.035	0.087	0.048	0.089
Top quartile			0.335**	0.093	0.322**	0.096
Gender						
Ref: Girl						
Boy			-0.021	0.046	-0.025	0.046
Family characteristics						
Parenting composition						
Ref: Co-parent household						
Single-mother household					0.330**	0.073
Adults in household						
Ref: No						
Yes					-0.102	0.096
Children in household						
Ref: One child						
Two children					-0.187**	0.069
Three or more children					-0.403**	0.074
CM meets grandparents						
Ref: Every day/almost						
At least once a week					0.206**	0.058
At least once a month					0.292**	0.072
Never or rarely					0.259**	0.068
Ward Level Variance	0.191	0.030	0.187	0.031	0.182	0.030
VPC	0.055 (5.5%)		0.054 (5.4%)		0.052 (5.2%)	
Log Likelihood	-6431.70		-6184.17		-6127.83	
Likelihood Ratio Test			$X^2_{(11)}$=495.06**		$X^2_{(7)}$=112.68**	
N	12,452		12,379		12,356	

As can be seen from Model 1 of Table 4.1, the variance of the null model is estimated as equal to 0.191. This result indicates that there is a small yet significant variation across localities in the proportion of 7-year-olds who

go to after-school clubs. About 5.5% of the variance in children's participation in after-school clubs is attributable to differences across the wards in which the cohort members reside.

Model 2 of Table 4.1 focuses on the effects of the child's, the parents' and the household's characteristics on the likelihood of participation in after-school clubs. The model indicates that the inclusion of these factors has no significant impact on the variation across wards. This means that the small observed differences across geographical areas (in relation to children's participation in after-school clubs) are not attributable to the included independent variables.

Model 2, in addition, shows that parental social class, mother's working hours, parental level of education and the family's income, but not child's gender, are all positively associated with the child's probability of going to an after-school club. The model indicates that, compared to children of parents with routine or manual jobs, children who have at least one parent in a managerial or professional occupation are somewhat more likely to attend after-school clubs. Likewise, children are more likely to attend after-school clubs if their parents are highly educated. Lastly, living in the 25% most well-off households, compared to living in the poorest 25%, is associated with greater likelihood of participation in after-school clubs.

Nevertheless, Model 2 coefficients, even when statistically significant, are quite small. This indicates that the net effect of each of the three SES factors of interest on children's likelihood of participation in after-school clubs is relatively moderate.

The Model 2 results show, in addition, that the children's participation propensity increases as mothers work longer hours. This

finding suggests that, in accordance with official childcare policies (see section 2.5.2, pp. 86-103), the availability of such clubs helps mothers to stay at work after the school day ends.

Indeed, in an earlier study of British parents (Smith & Barker, 1999a), over 80% reported that their children's attendance at out-of-school clubs allowed them to join (or re-join) the labour market. In addition, 35% of the parents in Smith and Barker's (1999a) study agreed that the use of such arrangements enabled them to work longer hours. Some of the parents also commented that they were able to take up some sort of studies (ibid.).

When Smith and Barker (1999b) explored children's perceptions regarding the main purpose of their attendance at the club, about 80% stated that they were attending after-school clubs because of their parents' employment, education or training. In comparison, 20% answered that they attended these clubs primarily because "they themselves want to" (ibid., p.7).

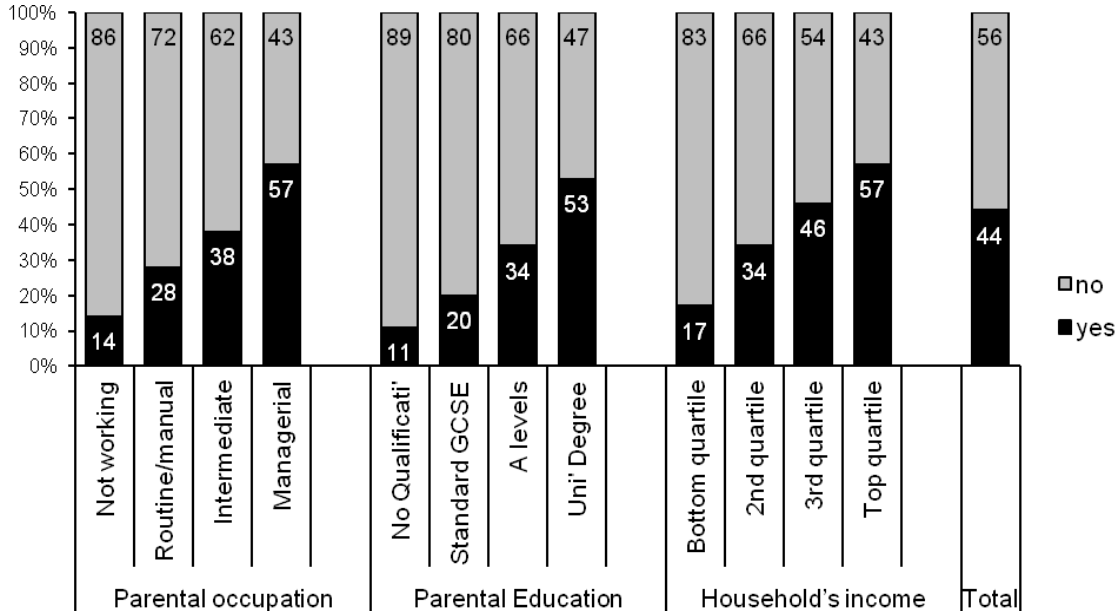
In this relation, MCS4 presented parents with the question: "[Is] childcare the main reason [your child] goes to out-of-school or homework club?" (NatCen, 2009a, p. 101). As can be seen from Figure 4.4, 44% of the MCS parents agreed that childcare is the key reason for enrolling their child in an after-school club compared to 56% who stated that childcare is not the main reason their child attended such clubs.

Figure 4.4 shows, however, that among the parents who agreed that childcare is the primary reason that their child attends an after-school club, there is an overrepresentation of parents with high-status occupations, university degrees and high income.

This suggests that after-school clubs may be utilised for childcare reasons by parents with high SES to a greater extent than by parents with

lower SES. It could be that low-SES parents opt for alternative childcare solutions.

Figure 4.4: Does your child attend after-school club mainly for childcare reasons? (Weighted, N= between 2,626-2,689)



Support for this possibility is found in a study by Barker et al. (2003), who showed that, even in clubs located in highly deprived areas and targeted on low-income families, the majority of attendees came from middle-class families and dual-earner homes. In addition, as has been discussed earlier in section 2.5.2 (pp. 95-97), research indicates that the fee associated with childcare for school-age children is a fundamental barrier for the participation of children who grow up in low-income families. It could be, therefore, that the costs involved in participation in after-school clubs hinder parents with low incomes from enrolling their children in such clubs.

The next set of results is given in Model 3 of Table 4.1. In this model, family characteristics are added to the equation. It can be seen, firstly, that the inclusion of the selected independent variables improves the model fit (LRT, $X^2_{(7)}$=112.68**). Secondly, the model shows that the associations reported earlier in Model 2 remain statistically significant once the additional independent variables are included. Also, Model 3 indicates that all the added independent variables, except "having adults other than the parents at home", are significantly related to the likelihood of attendance at after-school clubs.

As Model 3 demonstrates, children of single-mothers are more likely to attend after-school clubs than children in co-parent families. On the one hand, this finding might reflect the efforts made by the British government to provide single-mothers with a range of care solutions for their children, and by doing so, encourage them to join the labour market or take up a course or training. On the other hand, the finding may suggest that, regardless of whether or not a mother works or studies, single-mothers are in greater need of childcare services than partnered-mothers. This could be the case simply because the former group of mothers cannot rely on a partner to help with childcare as can the latter mothers.

Land (2002), in this context, showed that, in the UK, single-parents are more likely to use a mixture of formal and informal childcare arrangements than parents in couples (p. 19). More recently, analyses of data from the GUS study found that the use of multiple childcare providers was somewhat higher among single-parents of pre-school children than among co-parenting families (Bradshaw & Wasoff, 2009). Single-parents were also found to rely more heavily on a combination of both formal and informal

arrangements (ibid., p. 37). An additional GUS analysis showed that a larger number of pre-schoolers with single-mothers, compared to peers raised by partnered-mothers, experienced long hours of non-parental formal childcare (Zagel, Kadar-Satat, Jacobs, & Glendinning, 2013).

Model 3 of Table 4.1 further shows that children who see their grandparents frequently and those who have a larger number of siblings are less likely to attend after-school clubs. It could be that, grandparents provide parents with an available source of childcare which in turn, reduces their usage of after-school clubs. Hansen and Hawkes (2009), who analysed data from the MCS, showed that at age 9 months, 35% of the children were provided with care from a grandparent. They argued that grandparents often become the main suppliers of non-parental care.

Findings from the GUS survey also demonstrated the extensive engagement of grandparents in childrearing. GUS analyses indicate that grandparents are a key provider of informal childcare to the under-5s (Bradshaw & Wasoff, 2009; Jamieson, Warner, & Bradshaw, 2012).

An analysis of data from the "Understanding Society" longitudinal survey shows that between 2009/10 and 2010/11 not only was there a rise in the number of children aged from birth to 14 who received childcare provided by their grandparents, but the number of hours in the care of grandparents increased (Grandparents Plus, 2013). The report states that children are more likely to receive grandparental childcare if they live with a single-mother, irrespective of whether the mother is at work or not. Furthermore, among children of working parents, having a mother who is educated to GCSE level, or living in a household that falls into the middle-

low income distribution, is associated with greater likelihood of being looked after by grandparents (Grandparents Plus, 2013).

Taken together, these findings suggest that grandparents' involvement in caring for school-age children decreases parental demand for arrangements such as after-school clubs. Likewise, care assistance which parents receive from older siblings may provide them with an available alternative to after-school clubs.

Overall, Model 3 provides mixed results as to whether the availability of an extended familial network, at least at the nuclear family level, reduces parental demand for after-school clubs.

The analysis presented in Table 4.1 can now be summarised. This analysis shows, firstly, that there is a very small geographical difference in 7-year-olds' attendance at after-school clubs (5.2%). Secondly, Table 4.1 demonstrates that children's gender has no effect on the odds of participation in after-school clubs: boys and girls are equally likely to attend these clubs.

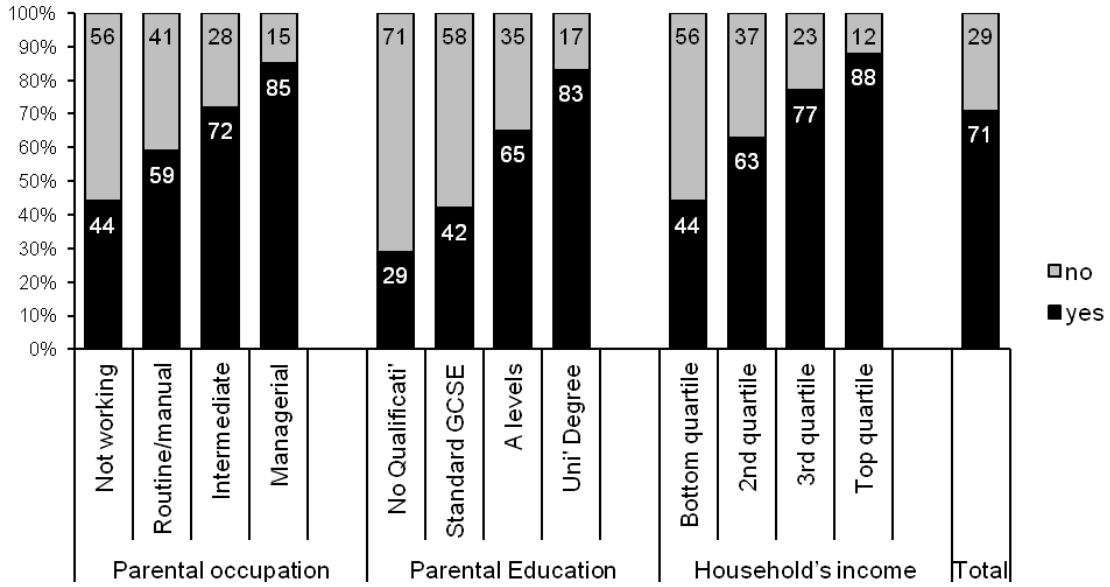
Conversely, there is a small positive effect of being a member of a better-off family or a child of middle-class highly educated parents on the probability of attending after-school clubs. The family structure is also linked to children's participation: a larger number of siblings under the age of 16, as well as frequent meetings with the grandparents, are associated with lower odds of attendance at after-school clubs. By contrast, living in a single-mother household increases the child's likelihood of participating in these clubs.

Participation in PA Clubs among Children from Different SES Groups

The following section displays results from models exploring the association between children's participation in out-of-school PA clubs and SES.

Figure 4.5, first, provides descriptive statistics on children's participation in PA clubs. The figure breaks down the rates of attendance at these clubs by child's SES. The picture obtained is that the percentages of children who participate in organised PA outside school vary considerably across the SES levels.

Figure 4.5: 7-year-olds' participation rates in PA clubs, by SES (weighted, N= between 12,218 and 12,005)



For example, among children of non-working parents, 44% attended PA clubs compared to 85% of those who have at least one parent in a professional or managerial occupation.

Likewise, children whose parents have no formal qualifications are represented in PA clubs to a lesser extent than their counterparts with a parent educated to university degree level (29% compared to 83%). A trend is also evident in relation to income; children who live in better-off homes are overrepresented in PA clubs compared to children living in poorer homes.

Table 4.2, next, presents the outcomes of multilevel regression models estimating the association between SES and 7-year-olds' participation in PA clubs.

Model 1 of Table 4.2 is a null model that sets up a benchmark as to the degree of variation in children's attendance at PA clubs across the sampled localities. The model estimates ward level variance as equal to 0.488, meaning that about 13% of the variance in attendance at PA clubs is related to differences across localities. Earlier in this study, Model 1 of Table 4.1 reported that the area variation in after-school clubs attendance rates is 5.5%. Thus, compared to participation in after-school clubs, attendance at PA clubs varies across localities to a much greater extent.

One explanation for this finding is that PA clubs, compared to after-school clubs, are more reliant on the availability of appropriate equipment as well as adequate indoor and outdoor sport facilities such as arenas, halls, studios, gyms and playing-fields. It may be that some localities have a more developed sport infrastructure than others, allowing the provision of more out-of-school PA opportunities for children who live in these places.

Table 4.2: Multilevel binary regression models estimating the effect of SES on the likelihood of attendance at physical activity clubs at age 7 (*p<0.05, **p<0.01)

	Model 1		**Model 2**		**Model 3**	
	Coeff'	S.E	Coeff'	S.E	Coeff'	S.E
Constant	0.936**	0.046	-0.724**	0.106	-0.549**	0.134
Child, parents and household factors						
Parental occupation						
Ref: Routine/manual						
Intermediate			0.248**	0.065	0.243**	0.066
Managerial			0.470**	0.068	0.478**	0.069
Not working			-0.081	0.078	-0.095	0.078
Mother's working hours			0.002	0.002	0.0003	0.002
Parental education						
Ref: No qualification						
GCSE			0.291**	0.105	0.275**	0.106
A-levels			0.762**	0.086	0.722**	0.087
University degree			1.053**	0.092	1.050**	0.093
Household income						
Ref: Bottom quartile						
2nd quartile			0.285**	0.062	0.293**	0.062
3rd quartile			0.625**	0.073	0.623**	0.075
Top quartile			1.192**	0.088	1.181**	0.090
Gender						
Ref: Girl						
Boy			0.030	0.043	0.031	0.043
Family characteristics						
Parenting composition						
Ref: Co-parent household						
Single-mother household					0.228**	0.064
Adults in household						
Ref: No						
Yes					-0.370**	0.083
Children in household						
Ref: One child						
Two children					-0.045	0.071
Three or more children					-0.281**	0.073
CM meets grandparents						
Ref: Every day/almost						
At least once a week					-0.061	0.053
At least once a month					-0.144*	0.069
Never or rarely					-0.212**	0.063
Ward Level Variance	0.488	0.055	0.168	0.027	0.156	0.026
VPC	0.129 (12.9%)		0.049 (4.9%)		0.045 (4.5%)	
Log Likelihood	-7531.59		-6790.58		-6738.35	
Likelihood Ratio Test			$X^2_{(11)}$=1482.02**		$X^2_{(7)}$=104.46**	
N	12,452		12,401		12,379	

Morrow (1999b), who explored the experiences of adolescents in one English comprehensive school located in a relatively deprived area, noted the negative implications of the lack of appropriate sport facilities for these students' well-being:

> …when they do go outside to play football, their experience is very neatly encapsulated by the oxymoron "Motorway Field". Even doing something healthy like playing football can be a health hazard, in terms of pollution from traffic and dog mess (p.20).

Besides the availability of satisfactory places and facilities, it could be that the greater locality effect found in PA club participation results from attendance at such clubs being more heavily dependent on transportation. This is because many organised PAs are confined to specific types of sport venue (such as football fields, tennis courts or swimming pools). Hence a better, more affordable transport system might increase the level of out-of-school PA uptake in these areas.

Bullock, Muschamp, Ridge and Wikeley (2010), who conducted a qualitative study of children's attendance at out-of-school activities, provided examples of how children who live in households with low incomes were deprived of the opportunity to participate regularly in organised PA due to transportation constraints. Their study has demonstrated that, in the absence of appropriate public transport options, children were heavily dependent on the availability of help from adults who were able and willing to drive them to and from football clubs and dance classes.

It is important to bear in mind, however, that the ward level differences might reflect not only locality factors, but also dissimilarities in individual features of the children or the families that reside in the respective

wards. For that reason, in Model 2 of Table 4.2, the child's, the parents' and the household's characteristics are introduced.

The results show, firstly, that the random effects have diminished substantially from 0.488 to 0.168, meaning that the introduction of this set of characteristics resulted in a reduction in the ward level variance (from 13% to only 5%). That finding indicates that a considerable portion of the differences across localities (regarding participation in PA clubs) is attributable to the factors added in Model 2. Thus, as suggested by the finding, while some geographical variation in attendance at PA clubs does exist, a good deal of this disparity is due to individual level SES differences.

Model 2 of Table 4.2, in addition, demonstrates that parental social class, level of educational qualification and income have a particular bearing on the odds of participation in PA clubs. An exponentiation of the model's coefficients shows that the estimated likelihood of participation for a child of a managerial parent is 1.6 times higher than that for a working-class child. Likewise, participation propensity in PA clubs increases with parental education; although not perfectly linear, there is a monotonically increasing relationship between the odds of participation and parental level of educational qualifications. A comparable trend is evident in relation to the family's income; the likelihood of participation in PA clubs is 3.3 times greater for children who are being raised in the richest 25% of households, compared to children who grow up in homes that fall into the poorest 25%.

A comparison of Model 2 of Table 4.2 and Model 2 of Table 4.1 (p. 185) suggests that the SES disparity in children's participation is considerably stronger in relation to PA clubs than in the case of after-school clubs. That is, the effect of growing up in a low-SES family has a greater negative impact on

how likely children are to attend PA clubs than on their chances of attending after-school clubs.

Overall, the Model 2 findings correspond with the scope of studies discussed earlier in section 2.5.2 (pp. 93-97), and which indicated that, in the UK and abroad, there are links between participation in out-of-school PA programs and factors such as income, education and social class (Blomfield & Barber, 2011; Covay & Carbonaro, 2010; DCMS, 1999; Fraser & Ziff, 2009; Humbert et al., 2006; Roberts, 2004; SportScotland, 2008; Voss et al., 2008; Walters et al., 2009).

Interestingly, Model 2 of Table 4.2 shows that maternal working hours have no statistically significant effect on participation in PA clubs. This is in contrast with the trend found previously in this thesis in relation to after-school clubs, whereby the odds on children's attendance increased with mothers' working hours. The comparison of the effect of maternal working hours on participation in the two types of clubs may be interpreted as an indication that after-school clubs, but less so PA clubs, are being utilised as a childcare resource by working mothers.

Model 2 of Table 4.2 presents another interesting result, according to which there is no significant association between a child's gender and his/her likelihood of attendance at PA clubs. From the present analysis it can be seen that boys and girls are equally likely to attend these clubs. This finding contradicts previous studies that explored the links between gender and sport participation. In general, many of these studies assert that sport is a highly gendered realm and that males participate to a greater degree than females. For example, surveys from Scotland (SportScotland, 2008) and England (DCSF, 2008; Fraser & Ziff, 2009) found that, among children and

adolescents, boys reported more frequent engagement in sport, and for longer hours, than girls. Research has also suggested that the variation in gender participation of physical activity may be related to age (SportScotland, 2007a), the type of activity attended (SportScotland, 2008; Xu, Gauthier, & Strohschein, 2009) and socialisation processes (Fredricks & Eccles, 2005). As shown by Model 2 of Table 4.2, however, the present analysis does not support the conclusion that participation in out-of-school PA clubs is gender-related. Of course, it should be borne in mind that the outcomes of different studies might reflect dissimilar definitions of sport and PA as well as differences in the age range of the surveyees in various studies, their places of residence and other empirical dissimilarities.

Next, in Model 3 of Table 4.2, the family structure is introduced. The results indicate that the associations reported earlier in Model 2 remain statistically significant once family characteristics are included, and that the ward level variance remains relatively unchanged. Also, Model 3 is an improved alternative to Model 2 in terms of its predictive accuracy (LRT;$X^2_{(7)}$=104.46**), meaning that the added independent variables help in predicting the likelihood of participation in PA clubs.

A review of the Model 3 statistics shows that children of single-mothers are somewhat more likely to attend PA clubs than children who are being raised in co-parent families. This trend is similar to the one found regarding participation in after-school clubs, and may represent a greater overall reliance of single-mothers on formal out-of-school arrangements. Alternatively, this finding could suggest that single-mothers, compared to parents in co-parent households, hold more positive attitudes towards their child's participation in organised sport OSA. However, since there is so little

research on the connection between family formation and participation in PA, this idea cannot be supported (or rejected) at this point. Evidently, more research into this issue is needed in order to fully unfold the connections between family formation and children's participation in PA.

Model 3 of Table 4.2 shows, in addition, a small negative effect of the number of siblings on the odds of participation in PA clubs, meaning that the likelihood of attendance at such venues decreases for children with more than two brothers or sisters. Little research has been carried out to investigate the links between family size and participation in sport and physical activity. However, Fraser and Ziff (2009), who analysed a sample of English children aged 5-16 years, have demonstrated that lone children were more likely to be inactive in the afternoons compared to those with siblings. This does not mean, however, that lone children participate less in organised PA outside the school day. Clearly, there is a need for deeper investigation of the association between engagement in sport activities and family size.

Furthermore, Model 3 shows that the presence of adults other than the parents at home, as well as looser contacts with grandparents, are negatively associated with the child's likelihood of participation in PA clubs. As has already been mentioned, in Great Britain, grandparents are a significant source of informal childcare (Bradshaw & Wasoff, 2009; Hansen & Hawkes, 2009; Jamieson et al., 2012). Earlier, Model 3 of Table 4.1 (p. 185) showed that the association between how often the cohort member meets his or her grandparents and the rates of attendance at after-school clubs is negative; frequent meetings reduce the likelihood of attendance at these clubs. However, when participation in PA clubs is considered, this

association is overturned; frequent meetings increase the likelihood of attendance.

One explanation for these opposite trends may be the various types of childrearing support provided by grandparents. On the one hand, grandparents can assist by taking care of their grandchildren outside of school hours and thus reduce the usage of after-school clubs. Hence frequent meetings with grandparents would mean lesser likelihood of attendance at after-school clubs. On the other hand, parents can also utilise grandparents' help in the form of driving or escorting youngsters to out-of-school sessions to do sport and PA. Such involvement of grandparents could lead to a scenario wherein more frequent interactions are associated with greater participation in PA clubs.

It can now be concluded that, according to evidence presented by the three Table 4.2 models, 7-year-olds' participation in out-of-school PA clubs is closely linked to SES. The analyses demonstrate that children in high-SES groups are more likely to attend these clubs than children who are less socio-economically advantaged. Specifically, the models show that the propensity to attend PA clubs rises considerably with parental occupational status, and even more so with parental educational level and household income. For example, children who grow up with at least one parent who is educated to university degree level are approximately 2.9 times more likely to attend PA clubs than peers with parents who hold no formal qualifications. Similarly, the odds of participation in such clubs is about 3 times higher for 7-year-olds who live in the 25% richest homes than for counterparts from homes that fall into the poorest 25%.

The analyses found, in addition, that family characteristics play a role in 7-year-olds' participation in PA clubs. Children are more likely to participate in these clubs if they are being raised in single-mother families, or if they are having relatively frequent contact with a grandparent and have a small number of siblings. However, the analysis found no indication of a gender gap in attendance at PA clubs at age 7.

Finally, a comparison of SES trends for participation in PA clubs and in after-school clubs indicates that, while, in both cases, the likelihood of attendance is higher for children in high-SES groups than for peers in low-SES groups, the disparity between children from high- and low-SES families is greater in relation to participation in PA clubs. Likewise, the effect of geographical factors appears greater on participation in PA clubs than on participation in after-school clubs. Nevertheless, the geographical effect of PA club attendance diminishes by more than half once SES is taken into account.

In what follows, I explore whether similar patterns are evident in relation to participation in enrichment clubs.

Participation in Enrichment Clubs among Children in Dissimilar SES Groups

The next section presents results from analyses performed to explore the links between SES and children's attendance at out-of-school enrichment clubs. Figure 4.6 breaks down the percentage of participation in these clubs, at age 7, by the three SES factors of interest. The figure provides an initial indication of whether or not children from different SES groups are equally represented in enrichment clubs.

Figure 4.6: 7-year-olds' participation rates in enrichment clubs, by SES (weighted, N= between 12,219 and 12,003)

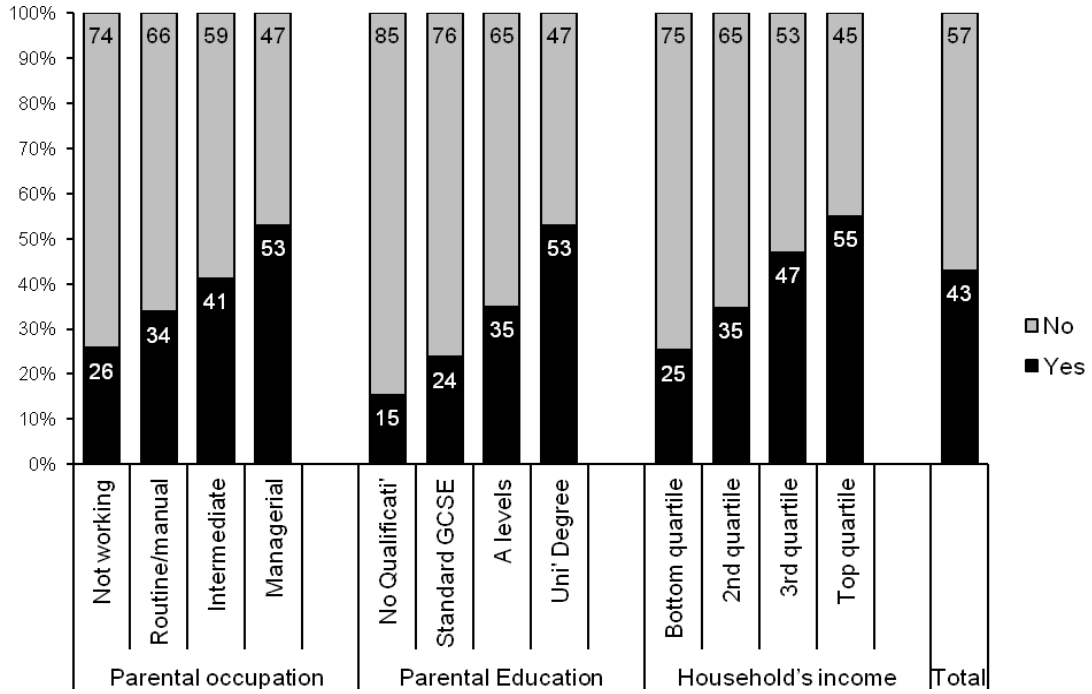


Figure 4.6 shows that 43% of the British 7-year-olds attend out-of-school enrichment clubs at least once a week. However, the figure also demonstrates that the rates of participation in these clubs increase with parents' occupational status, level of education and incomes.

Table 4.3 takes the analysis a step further to present results from multilevel regression models assessing the effect of different independent variables on the likelihood of attendance at enrichment clubs.

Model 1 of Table 4.3 is the null model. The model estimates at 0.285 the variation in participation in enrichment clubs across the sampled wards. That figure could be interpreted as follows. Approximately 8% of the variance in the probability of attendance at enrichment clubs is attributable to differences in the localities where children live.

Table 4.3: Multilevel binary regression models estimating the effect of SES on the likelihood of attendance at enrichment clubs at age 7 (*p<0.05, **p<0.01)

	Model 1		**Model 2**		**Model 3**	
	Coeff'	S.E	Coeff'	S.E	Coeff'	S.E
Constant	-0.395**	0.036	-1.376**	0.119	-1.417**	0.143
Child, parents and household factors						
Parental occupation						
Ref: Routine/manual						
Intermediate			0.137*	0.065	0.132*	0.065
Managerial			0.322**	0.064	0.317**	0.065
Not working			-0.176*	0.080	-0.188*	0.081
Mother's working hours			-0.007**	0.002	-0.008**	0.002
Parental education						
Ref: No qualification						
GCSE			0.299*	0.126	0.296*	0.126
A-levels			0.658**	0.103	0.654**	0.104
University degree			1.057**	0.107	1.055**	0.107
Household income						
Ref: Bottom quartile						
2nd quartile			0.169*	0.066	0.175**	0.067
3rd quartile			0.438**	0.073	0.437**	0.075
Top quartile			0.629**	0.080	0.620**	0.082
Gender						
Ref: Girl						
Boy			-0.309**	0.039	-0.312**	0.039
Family characteristics						
Parenting composition						
Ref: Co-parent household						
Single-mother household					0.121	0.065
Adults in household						
Ref: No						
Yes					-0.184*	0.083
Children in household						
Ref: One child						
Two children					0.078	0.064
Three or more children					-0.081	0.067
CM meets grandparents						
Ref: Everyday/almost						
At least once a week					0.014	0.049
At least once a month					0.046	0.063
Never or rarely					0.054	0.059
Ward Level Variance	0.285	0.034	0.140	0.023	0.138	0.023
VPC	0.080 (8.0%)		0.041 (4.1%)		0.040 (4.0%)	
Log Likelihood	-8215.91		-7714.06		-7689.85	
Likelihood Ratio Test			$X^2_{(11)}$=1003.7**		$X^2_{(7)}$=48.42**	
N	12,452		12,401		12,379	

Comparing the ward level variation of participation in the three clubs investigated in the current research, Model 1 of Table 4.3 indicates that the geographical difference in participation rates of enrichment clubs is lower than the variance in participation rates of PA clubs (13%), but higher than the

variance in attendance at after-school clubs (5.5%). Participation in the three types of clubs, then, might be differently affected by locality factors. In addition there could be complex interactions between geographical factors and individual or household level characteristics. Localities may differ in the provision of facilities and the accessibility and affordability of transportation, but also could be inhabited by people with diverse SES profiles. Together, these features may affect participation in the three types of clubs in more than just one way.

Model 2 of Table 4.3 introduces the child's, the parents' and the household's characteristics. The model shows that the ward level variation drops from 8% to 4%, and that Model 2 is a significant improvement on Model 1 in terms of its predictive accuracy (LRT, $X^2_{(11)} \cong 1{,}003^{**}$). Furthermore, the model demonstrates a trend whereby the likelihood of participation in enrichment clubs increases with SES. Children who grow up with at least one parent in a professional or managerial occupation have better chances of attending enrichment clubs than children of parents in manual/routine jobs, who in turn have a higher probability of participation in these clubs than children of two non-working parents.

Similar associations are found in relation to parental qualifications and household income: participation propensity increases as children are raised by better-educated parents and live in higher income earning families. These findings are consistent with patterns that have been found in the US by Covay and Carbonaro (2010) in relation to elementary school children's attendance at extracurricular art, drama and music classes. Also, a study by Xu et al. (2009) showed that, in Canada, the attendance rates at organised

enrichment OSA is higher for children of better-educated parents and those who live in wealthier homes.

There is also a small yet statistically significant negative effect of mothers' working hours on a child's probability of attending enrichment clubs, meaning that the longer mothers stay at work, the lesser are the odds that their children will attend enrichment clubs. By comparison, Model 2 of Table 4.2 (p. 194) displays no effect of mother's working hours on the attendance rates of PA clubs, while Model 2 of Table 4.1 (p. 185) shows that, in the case of after-school clubs, mothers' working hours are positively associated with the likelihood of participation. That result could indicate that after-school clubs are utilised by mothers mainly for childcare purposes, while the two other types of out-of-school clubs are used for leisure or to enrich the child's experiences through extracurricular activities.

Model 2 also shows that there is a gender difference in the likelihood of participation in enrichment clubs. Girls are more likely than boys to attend these clubs. Prior research has indicated that, at least to some degree, the two genders spend their after-school free time in dissimilar ways. For example, other studies have shown that boys, compared to girls, tend to spend a greater portion of their out-of-school time doing sport and PA (e.g., DCSF, 2008; Fraser & Ziff, 2009; Shann, 2001; SportScotland, 2007b). In relation to organised non-sport OSA, Ziviani et al. (2008) found that, among 6-8-year-old children, on average girls were engaged in musical and cultural activities for more hours a day than boys.

The present analysis lends some support to OSA being a gendered domain. While, as has been shown earlier, boys and girls are equally likely to

attend PA clubs, Model 2 of Table 4.3 shows that the chances of attendance at enrichment clubs are somewhat higher for girls than for same-age boys.

Next, Model 3 of Table 4.3 adds family factors as predictors of children's participation in enrichment clubs. As can be seen, the effects of the independent variables that were investigated in Model 2 hold once family characteristics are included. Model 3 also presents an improved measure of "prediction accuracy", meaning that the introduction of the chosen family indicators helps in estimating children's participation in enrichment clubs (LRT; $X^2_{(7)}$=48.42**).

Model 3 indicates that there is no statistically significant association between the family formation and family size, or the frequency with which cohort members see their grandparents, and the likelihood of participation in enrichment clubs. This outcome is not equivalent to results presented earlier in this chapter, according to which the associations between family characteristics and attendance at after-school clubs and PA clubs were explored. Conversely, the model shows a negative effect of sharing the home with adults other than the parent/s on the chances of attendance at enrichment clubs. As with participation in PA clubs, it seems that the presence of additional adults in the household deters children's participation in these clubs. Overall, these results could be interpreted as an indication of the role adults other than the main carer (usually the mother) play in providing out-of-school childcare for 7-year-olds.

Overall, the analyses presented in Table 4.3 indicate that there is socio-economic inequality in 7-year-olds' participation in out-of-school enrichment clubs. In keeping with results from models showing the associations between SES and participation in after-school clubs, and even

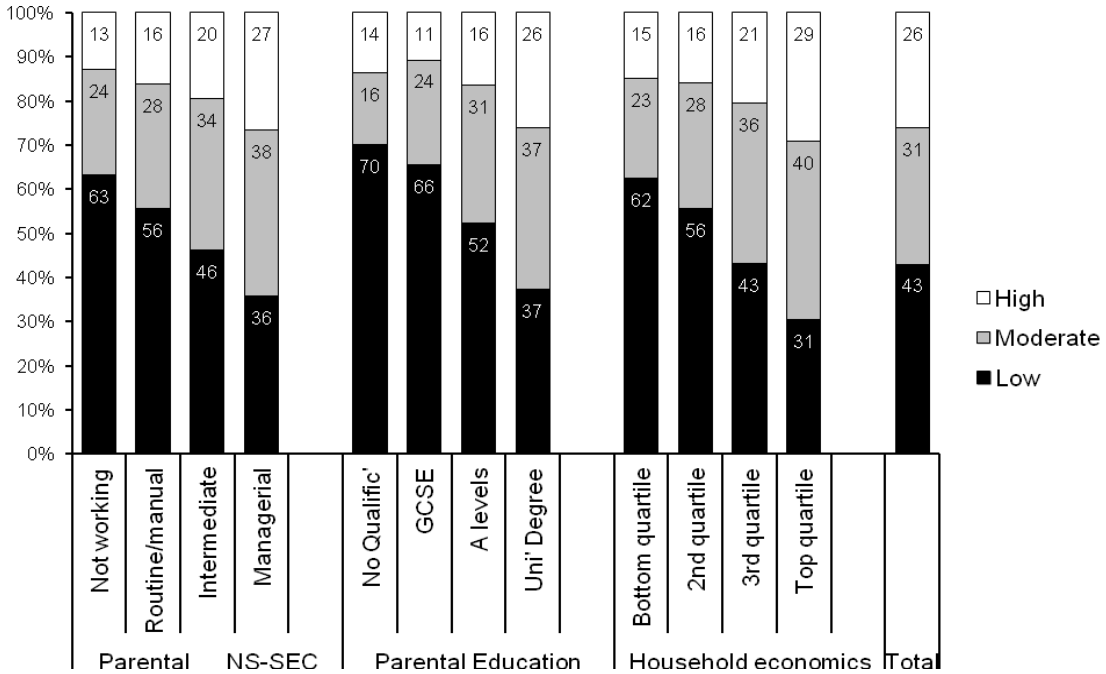
stronger links with participation in PA clubs, the Table 4.3 models show that children in high-SES groups are more likely to attend enrichment clubs. In addition, the propensity for attendance at enrichment clubs is greater for children who grow up in a home where there are no adults other than the parents. By contrast, the family formation, the number of siblings, and the frequency of meetings with the grandparents seem to have a non-significant bearing on whether or not children attend enrichment clubs. Lastly, the participation rate in enrichment clubs, but not in after-school or PA clubs, is found to be higher for girls than for boys.

SES and the Frequency of Participation in Social-Group OSA

The previous analyses have focused on estimating the likelihood of attendance (compared to non-attendance) at the three types of social-group OSA, by selected independent variables. A question remains, therefore, about how "active" children are. That is: how many sessions of social-group OSA per week do 7-year-olds usually attend? Moreover, does children's "activeness" level depend on their SES? The next set of analyses addresses these issues by identifying which SES characteristics, if any, have a bearing on the degree to which children participate in social-group OSA.

Figure 4.7, first, displays descriptive statistics related to children's frequency of participation in social-group OSA and "breaks down" the level of their "activeness" by SES. The figure illustrates a pattern of association between SES and children's level of activeness. It can be seen that in more "active" categories, the percentage of socio-economically advantaged children is higher.

Figure 4.7: How "active" are children? The frequency of participation in social-group OSA, by SES (weighted, N= between 9,833 and 9,629)



For example, the percentage of children in the most active group is considerably greater among those coming from families where at least one of the parents holds a managerial or professional job (27%), compared to children of parents in routine/manual jobs (16%) or those with parents who are not in paid work (13%). Similarly, the percentage of children in the "highly" active group is greater for children of highly-educated parents and for those who live in higher-income earning families than for children of poorly-educated parents or those who live in low-income earning homes. In contrast, children from low-SES groups are overrepresented in the "low" activity category.

Next, Table 4.4 presents results from ordered regression models assessing the associations between children's SES and their frequency of

participation in social-group OSA. The models estimate how likely children are to be in a more "active" group, given a set of SES factors. It is worth noting that, by contrast to the binary regressions used in this chapter, the models displayed in Table 4.4 estimate two (rather than one) transitions: a transition from being in a "low" activity group to being in a "moderately" active group, and then to being in a "highly" active category.

Model 1 of Table 4.4 confirms the trend presented in Figure 4.7. The model indicates that the propensity for being highly active increases with parental occupational and educational level, as well as with the family's income. The factor of mother's working hours is also positively linked to a greater likelihood of being more active.

The "Partial Proportional Odds" technique, however, shows that the effect of parental education is not entirely consistent across all "activeness" levels. The results propose that being raised by a better educated parent has a stronger influence on being in the "moderately active" category (compared to being in the "low" activity category) than on being in the "highly active" category (compared to being in the "moderately active" category).

Similarly, the effect of income differs by activity level, indicating that there is a non-linear association between the family's income and how active a child is. Here, too, there is an indication that children raised in better-off homes are more likely to be among those who are "moderately active" than in the "low active" group. However, only those who live in homes that fall into the top income quartile are also likely to be within the "highly active" category.

Table 4.4: Ordered logistic regression models estimating the effect of SES on the frequency of attendance at social-group OSA at age 7 (*p<0.05, **p<0.01)

	Model 1		Model 2	
	Coeff'	SE	Coeff'	SE
"Moderate" compared to "Low" (constant)	-1.065	0.158	-0.908**	0.176
Child, parents and household factors				
Parental occupation (Ref: routine/manual)				
Intermediate	0.062	0.077	0.078	0.078
Managerial	0.156*	0.076	0.168*	0.075
Not working	-0.111	0.098	-0.177	0.100
Mother's working hours	0.006**	0.002	0.004*	0.002
Parental education (Ref: no formal qualification)				
GCSE	0.342	0.183	0.338	0.186
A-levels	0.554**	0.157	0.556**	0.162
University degree	0.807**	0.160	0.806**	0.165
Household's income (Ref: bottom quartile)				
2nd quartile	0.019	0.092	0.049	0.094
3rd quartile	0.415**	0.096	0.454**	0.101
Top quartile	0.845**	0.100	0.881**	0.108
Gender (Ref: girl)				
Boy	0.044	0.047	0.040	0.047
Family structure				
Parenting composition (Ref: co-parents)				
Single-mother			0.178*	0.084
Other adults in household (Ref: no)				
Yes			-0.365**	0.113
No. of children in household (Ref: one child)				
Two children			-0.163*	0.068
Three or more children			-0.243**	0.073
CM meets grandparents (Ref: every day / almost every day)				
At least once a week			-0.050	0.058
At least once a month			0.076	0.067
Never or rarely			0.151*	0.074
"High" compared to "Moderate" (constant)	-1.985**	0.213	-1.829**	0.223
Child, parents and household factors				
Parental occupation (Ref: routine/manual)				
Intermediate	0.062	0.077	0.078	0.078
Managerial	0.156*	0.076	0.168*	0.075
Not working	-0.111	0.098	-0.177	0.100
Mother's working hours	0.013**	0.002	0.011**	0.002
Parental education (Ref: no formal qualification)				
GCSE	-0.119	0.302	-0.124	0.305
A-levels	0.151	0.219	0.150	0.223
University degree	0.445*	0.219	0.441*	0.224
Household's income (Ref: bottom quartile)				
2nd quartile	-0.326**	0.125	-0.304*	0.125
3rd quartile	-0.058	0.123	-0.021	0.126
Top quartile	0.239*	0.116	0.274*	0.122
Gender (Ref: girl)				
Boy	0.044	0.047	0.040	0.047
Family structure				
Parenting composition (Ref: co-parents)				
Single-mother			0.178*	0.084
Other adults in household (Ref: no)				
Yes			-0.365**	0.113
No. of children in household (Ref: one child)				
Two children			-0.163*	0.068
Three or more children			-0.243**	0.073
CM meets grandparents (Ref: every day / almost every day)				
At least once a week			-0.050	0.058
At least once a month			0.076	0.067
Never or rarely			0.151*	0.074
Wald test[a]	$F_{(4,325)}=1.22$; $p=0.30$		$F_{(11,318)}=0.78$; $p=0.65$	
N	9,388		9,373	

a. A non significant result = no violation of the parallel lines assumption

These results suggest that children in the high-SES group, compared to counterparts in low-SES groups, are more likely to be engaged in 3-4 club

sessions a week than in only 1-2 such sessions. But only those who are in the "top" SES level are more likely to also be engaged in 5 or more club sessions a week. In other words: the most socio-economically advantaged children are the most active ones in terms of their participation in social-group OSA.

Finally, Model 1 shows that gender is not associated with the child's level of activeness, meaning that girls and boys are equally active in social-group OSA.

In Model 2 of Table 4.4, family characteristics are added. As can be seen, firstly, the effects of parental occupation and education levels, maternal working hours, household's income and child's gender hold once the family indicators are included. Model 2, secondly, shows that children who grow up in single-mother households are more likely to be "highly" active compared to children who are raised in co-parent homes. Conversely, the association between having adults other than the main carers at home and the frequency of participation in social-group OSA is negative. The same trend exists for family size: having a large number of siblings reduces the likelihood of being in a more active category. Finally, Model 2 demonstrates that children who rarely see their grandparents are likely to be in a more active category than those who maintain frequent contact with their grandparents..

Taking together the outcomes displayed in Table 4.4 and prior results presented in this section (4.3.1), the research indicates, first, that not only are children of better-educated parents, of parents who hold higher-status jobs, and living in families with greater income more likely to attend social-group OSA, they are also more likely than children from lower-SES groups to spend more of their free time in these activities. By contrast, while there is some dissimilarity between boys and girls in the likelihood of

attending specific social-group OSA, overall the two genders tend to be equally active.

The results also indicate that family characteristics affect not only whether or not children will participate in different social-group OSA, but also on how many sessions a week they will attend. Single-motherhood, for example, is generally linked to increased chances of attending out-of-school clubs/classes as well as to greater likelihood of children being engaged in a large number of sessions per week. As has been suggested earlier, this trend could represent a greater dependency of single–mothers than of mothers in co-parent families on formal childcare arrangements. It also could be the case that single-mothers have more positive perceptions of social-group OSA, which lead to greater participation of their children in such activities.

By contrast, the analyses show that living in homes where there are adults other than the main carers, or where there is a larger number of children under the age of 16, is associated with decreased likelihood of being highly active in terms of participation in social-group OSA. It could be that households with a greater number of people, whether adults or children, constitute a greater source of "familial-based" childcare options, as well as "in-house" leisure opportunities, on which parents can rely. In turn, the higher availability of such solutions may deter children's overall level of engagement with social-group OSA.

Likewise, there is an association, small in magnitude but statistically significant, between how often children see their grandparents and their level of activeness. That is: children who rarely meet with their grandparents are more likely than peers who see their grandparents on a daily basis to be

highly active. This points to the idea that grandparents may form an additional source of out-of-school childcare for 7-year-olds.

4.3.2 Summary: Children's Participation in Social-Group OSA in GB

Section 4.3.1 has focused on examining whether or not there are differences among children from dissimilar SES groups in terms of their likelihood of attending three types of social-group OSA: after-school clubs, physical activity (PA) clubs, and enrichment clubs. In addition, the SES factors associated with the frequency of 7-year-olds' participation in such OSA have been explored.

A body of (mostly US) research has already documented the existence of socio-economic disparity in students' participation in out-of-school activities similar to those explored in the present study (Bullock et al., 2010; Covay & Carbonaro, 2010; Duffett & Johnson, 2004; Feinstein et al., 2006; Humbert et al., 2006; Larner et al., 1999; Mahoney, Lord, & Carryl, 2005; Muschamp et al., 2009; Walters et al., 2009). In general, this scope of research indicates that children in low-SES groups are underrepresented in a variety of social-group OSA.

However, a review of published academic works and policy documents shows that there is little UK-based quantitative research into inequality in school-age children's participation in social-group OSA. An investigation of the British out-of-school field is particularly important when considering the commitment demonstrated in the past two decades by the government (as well as by voluntary organisations) to developing and implementing more affordable and accessible childcare arrangements for

children aged 5 and above (e.g., DCMS, 1999, 2001; DfES, 2005; Scottish Executive, 2003; Scottish Government, 2005; SureStart & DfES, 2003).

As has been detailed in section 2.5.2 (pp. 89-93), the main motives for the governmental investments in such OSA included the wish to increase maternal employment rates (British Government, 2005); put into practice an "inclusion through participation" philosophy (DCMS, 2001; SportScotland, 2005); and provide children from all SES groups with the opportunity to attend high-quality childcare facilities, including out-of-school clubs, which would allow them "the best start in life" (British Government, 1998, p. 5, 2005, p. 9; Scottish Executive, 2003, pp. 90–91).

In an attempt to explain the results presented thus far by the current research, the next sections situate the main findings in the theoretical context discussed in Chapter 2 of this thesis.

SES and Participation in Social-Group OSA – A Cultural Perspective

The analyses displayed in section 4.3.1 have established that SES inequality in British children's participation in social-group OSA exists. This is the case even when controlling for family characteristics and geographical factors. In keeping with studies from non-British countries, the current study found that there is a positive association between children's SES and their likelihood of attending the explored social-group OSA.

The results in Tables 4.1-4.4 show that children who grow up in well-off families, or in homes where at least one of the parents is highly educated or in a high-status occupation, are more likely than poorer children or those

with less well-qualified and working-class parents to attend out-of-school clubs as well as to go to more club sessions per week.

As demonstrated by the analyses in this section, the SES disparity is evident in all the examined social-group OSA; however, it is especially large in participation in enrichment clubs, and even more so in attendance at PA clubs. The SES inequality in children's attendance rates at after-school clubs is small. In addition, among the three SES dimensions that were introduced, parental education and income levels seem to have a stronger link than social class with whether or not children participate in social-group OSA and the extent to which they participate.

Furthermore, the analyses indicate that SES accounts for a considerable portion of the ward-level differences in children's participation rates in enrichment and PA clubs, but not in after-school clubs. However, while the inclusion of SES measures (and family factors) noticeably reduces the geographical variance in children's probability of participation in these two types of clubs, about 4.5%-5.5% ward-level differences remain. Similarly, there is a small degree of locality effect in participation in after-school clubs.

The results reported here can be understood in various ways. For instance, parents' and children's preferences as to how they would like the afternoons to be spent may vary by SES. It could be that high-SES parents, more than low-SES parents, enrol their children in after-school clubs and PA and enrichment clubs/classes in greater numbers because they favour organised/adult-led leisure activities over alternative activities such as free play or domestic chores, in which children may become engaged during their afternoon free time.

Indeed, researchers using a cultural capital lens have suggested that parental preferences and attitudes towards how children should be spending their out-of-school time differ by SES (Berhau et al., 2011; Lareau & Cox, 2011; Lareau & Weininger, 2008; Lareau, 2003; Vincent & Ball, 2007; Vincent et al., 2013). Prior research indicates that encouraging children to participate in organised social-group OSA is part of a "concerted cultivation" childrearing practice (Lareau, 2003) which characterises higher- and middle-class parents. It has been suggested that, from a very young age, these parents perceive their child's participation in extracurricular leisure-time activities as a tool for building up his or her middle-class habitus (Vincent & Ball, 2007), and that encouraging the child to engage in such activities is seen as an act of good parenting (Vincent et al., 2013). The present analyses lend support to that notion by showing that children in high-SES groups are more likely to participate in various organised out-of-school clubs and classes, and for more sessions a week, than their counterparts in low-SES groups.

Furthermore, the current study shows that, while the SES disparity in after-school clubs attendance rates is small, there are large socio-economic differences in participation in enrichment clubs and even more so in the likelihood of attendance at PA clubs. That finding can also be interpreted as consistent with the cultural capital paradigm and the middle class's concerted cultivation practice. This is for two main reasons:

Firstly, engagement in physical activity and sports can be seen as a marker of class membership and as a mechanism for intergenerational transfer of an advantageous socio-economic position from parents to children. Following Bourdieu's 1984 "Distinction", Warde (2006) suggested that the body forms "a window onto social hierarchy, the transmission of

capitals and the process of domination by groups and classes" (p. 121). So, in high-SES groups, fostering an active lifestyle from a young age may be part of the greater project that Vincent and Ball (2007) called "making up the middle-class child" (p. 1061).

Secondly, as has been discussed in section 2.3.5 (pp. 37-44), one of the logics underpinning the concerted cultivation practice is that childhood is a developmental project (Lareau, 2003, pp .67, 126). For this project to be fully accomplished, parents must provide their children with opportunities to develop, exercise and exhibit their unique talents (Lareau, 2003, p. 100). Participation in OSA such as team sports and dance, language, drama, music or art lessons, meets this requirement by providing the child with an opportunity to engage in skill-building activities under the supervision of trained staff. Such opportunities may be less common in after-school clubs.

This is because, firstly, after-school clubs are designed primarily to provide children with care, recreation and relaxation (Munton et al., 2001, p. 47; Scottish Executive, 2003, 2006, p. 7; Scottish Government, 2009; Smith & Barker, 1999a; SureStart, 2004), and are less oriented towards enhancement of specific talents. Secondly, policy and research publications demonstrate an explicit preference for organising the after-school club's activities around self-guided play with "peripheral", rather than direct, adult supervision (Wikeley et al., 2007, p. 14). One example of that orientation can be found in a SureStart (2004) leaflet aimed at potential play-work recruits:

> …you'd be ensuring that children and young people have the chance to play, choosing exciting activities for themselves in a safe and caring environment (p. 3).

Moreover, a survey of providers showed a perception that "afterschool childcare is play, not added education hours" (Smith &Barker, 1999a, p.12) and that, in the after-school club's environment, children's development is fostered through providing opportunities for "experiential learning", such as that which occurs while they are engaged with various activities (Smith &Barker, 1999a, p.10). Appendix 2 illustrates a typical day in an after-school club (pp. 392-393).

As with after-school clubs, it is apparent that creating an enjoyable environment in which children will have fun is an important element of out-of-school PA and enrichment clubs (see Appendices 3-4, pp. 394-397). However, by contrast with after-school clubs, which focus primarily on the provision of enjoyable activities in a safe, semi-supervised environment, it appears that PA and enrichment clubs strive to establish what can described as "fun with a purpose" (Block, 1997, cited in Vincent & Ball, 2007, p. 1065; Martin, 2012; ScoutsScotland, 2012). A "fun with a purpose" approach is expressed in the fact that, alongside designing enjoyable activities, consideration is given to how these activities can help in achieving a particular goal and equip the child with special skills and extra knowledge.

It is also apparent that enrichment and PA clubs offer fairly structured programmes which include skill-building activities of progressing difficulty/ sophistication and, indeed, are dissimilar to after-school clubs in that respect. Often in enrichment and PA clubs, the children's progression and skills are acknowledged through competitions, performances or exhibitions, and their accomplishments are explicitly rewarded with cloth badges, certificates, medals and other trophies. Examples of these

characteristics of PA and enrichment clubs are illustrated in Appendices 3-4 (pp. 394-397).

So, there seems to be a difference between after-school clubs and out-of-school PA and enrichment clubs. While the first type of clubs offers a childcare-focused environment, the latter is oriented towards the provision of skill-building activities. Furthermore, despite a shared idea that children should spend their afternoon free time engaged in fun activities, the three types of clubs present different interpretations of what constitutes fun. It appears that after-school clubs construct the concept with reference to the formal school experience and, by so doing, place emphasis on providing children with flexibility, choice and free play options. By contrast, enrichment clubs, and even more so PA clubs, introduce a "fun with a purpose" approach according to which enjoyment is not a goal in itself, but a concept embedded in activities that set particular skill-building targets.

Returning to the concept of "concerted cultivation", it could be that enrichment and PA clubs, more than after-school clubs, are perceived by parents with high SES as a platform on which their children can develop their talents and start to build up a portfolio of proficiencies. In turn, this class-based preference towards specific clubs/classes creates a larger disparity in the rates of participation of high- and low-SES children in PA and enrichment clubs than in after-school clubs.

This interpretation, however, must be taken with caution. Studies have demonstrated that educational decisions are a privilege which many low-income families and students from socio-economically disadvantaged background lack (Crozier et al., 2008; Reay et al., 2001; Reay & Lucey, 2003). This means that it could be that low-SES parents enrol their children in PA

and enrichment clubs in smaller numbers than high-SES parents not because of dissimilar perceptions of their parenting role or of the nature of childhood, but because of greater substantive constraints.

For example, participation in PA and enrichment clubs may involve higher economic costs than attendance at after-school clubs, making the two former types of clubs more affordable for children from high-SES families than for counterparts who grow up with low-SES parents. As has been discussed in section 2.5.2 (p. 84), prior studies have indicated that the costs associated with participation in social-group OSA are among the main reasons why children refrain from attending such activities (Earle, 2009; Larner et al., 1999; Parsad et al., 2009; Smith et al., 2012).

In addition, the provision of PA and enrichment clubs might be less developed in certain areas compared to after-school clubs. This could make PA and enrichment clubs less accessible to children from families of limited means. Or, it could also be that children in lower-SES groups refrain from participating in PA and enrichment clubs because they have no friends in these settings or because they feel they do not fit-in (Reay, 2004b; Wikeley et al., 2007).

Family Features, Social Capital and Participation in Social-Group OSA

In addition to SES disparity in attendance at social-group OSA, the models presented in section 4.3.1 found that the propensity for participation in social-group OSA is linked to family features. Children who are raised by single-mothers have greater likelihood of attending out-of-school clubs/classes and to be engaged in these clubs for larger amounts of time.

This result suggests that, irrespective of SES, single-mothers rely to a greater degree than co-parenting couples on out-of-school clubs as a source of childcare for their 7-year-olds.

The result is consistent with Coleman's (1988) and Putnam's (1993) ideas according to which ties among close family members constitute a source of bonding social capital which parents can exploit for various purposes. This perspective suggests that single-mothers possess smaller stocks of bonding social capital than mothers in co-parenting families, either due to lack of contacts that a partner might bring, negative stigmatisation that results in fewer friendships, or limited resources for engaging with others socially. As a result, they may have fewer options for relative-based childcare.

However, the analyses show that children of single-mothers are enrolled in more club sessions a week than children who grow up in co-parenting families. Potentially, this greater engagement in social-group OSA increases the single-mothers' (and their children's) level of social capital, by allowing them to develop ties with members outside the nuclear family and immediate circle of close friends. Moreover, the greater engagement of children with single-mothers in social-group OSA may develop a stock of bridging social capital for these mothers and their children, on top of the bonding ties characterised by familial relationships.

An opposite trend is found in relation to family size. Children who live in homes where there are additional adults besides the parents, or a large number of siblings, generally have lower chances of participation in out-of-school clubs. This outcome might indicate that the availability of more than just one or two adults in the child's immediate environment – that is, the

existence of large stocks of bonding social capital – reduces the need to rely on formal childcare arrangements such as out-of-school clubs. The consequence of lower engagement in social-groups OSA could be lower levels of bridging social capital for these children.

An interesting result comes from analysing the differing effects of the availability of grandparents on attendance at the three types of clubs. As has been demonstrated, frequent meetings with the grandparents were found to be positively associated with participation in PA clubs, but negatively linked to participation in after-school clubs. Prior research has demonstrated that grandparents play an important role in providing non-formal childcare assistance for pre-school children (Bradshaw & Wasoff, 2009; Jamieson et al., 2012). The current findings suggest that grandparents' role as informal childcare providers may be flexible and tailored to the child's (and parents') varying needs. For instance – while grandparents can assist by supervising children at home during the afternoons, they can also assist by escorting them to out-of-school activities.

Conclusions

The findings presented in this section indicate that there is socio-economic inequality in children's participation in social-group OSA: children in higher-SES groups, as measured by parental education and qualification levels and familial incomes, are more likely to attend these settings and for larger amounts of time. It appears that the most profound gaps among children from diverse SES groups are in attendance at PA clubs, but there are also dissimilarities in the attendance rates of children at enrichment clubs. In

comparison, a smaller degree of inequality was found in the likelihood of children from high- and low-SES groups to participate in after-school clubs.

As outlined above, it seems that the participation of children from low-SES families in the discussed activities is hindered by various perceptual and concrete barriers, including economic costs, issues of accessibility, and the availability of social ties within the settings.

Moreover, the demonstrated pattern of SES disparity is consistent with the idea that participation in organised out-of-school activities is a mechanism for intergenerational cultural reproduction. These activities are utilised by "concerted cultivation"-oriented high-SES parents to equip their children with a repertoire of middle-class experiences and a "tool-kit" of talents.

4.3.3 Participation in Commercial-Public Leisure OSA

This section is designed to gain a better understanding of the links between children's SES and their participation in commercialised leisure activities that take place in public spaces, either indoors or outdoors. To this end, 7-year-olds' attendance at the following activities and venues has been explored: art exhibitions, the cinema, professional sport events, theme-parks and funfairs. The rationales for choosing these activities for the present study have been discussed in section 2.5.3 (p. 103) and included the wish to explore activities that broadly characterise different levels of cultural capital as well as the availability of data.

The section begins by presenting descriptive results which give a brief overview of children's participation in the 4 commercial-public leisure activities of interest.

Descriptive Results

Figure 4.8 displays the percentage of British children who attended each of the investigated commercial-public OSA at age 7, by SES. The figure shows that the attendance rates of 7-year-olds at art venues, the cinema and at theme-parks/funfairs are 70%, 83% and 70% respectively. This means that, although the majority of children are exposed to these leisure activities, within the examined age group, there is a considerable number of children who had not been to the respective venues or events even once in a 12-month period.

As can be seen from Figure 4.8, sport spectatorship is a different story. The attendance rates at professional sport events are much lower compared to the former three activities in question: about 1 in 4 of the 7-year-olds had been to such an event as a spectator. There could be many reasons for that lower percentage of attendance at sport events. For instance, attendance at professional sport events may require parents to invest greater amounts of time and money than visits to museums, galleries, the cinema or funfairs. Or, it could be that the frequency of professional sport events is low or that parents do not perceive these events as age-appropriate compared to alternative leisure activities.

Figure 4.8: Participation rates in commercial-public OSA at age 7, by SES (weighted, N= between 12,218 and 12,003)

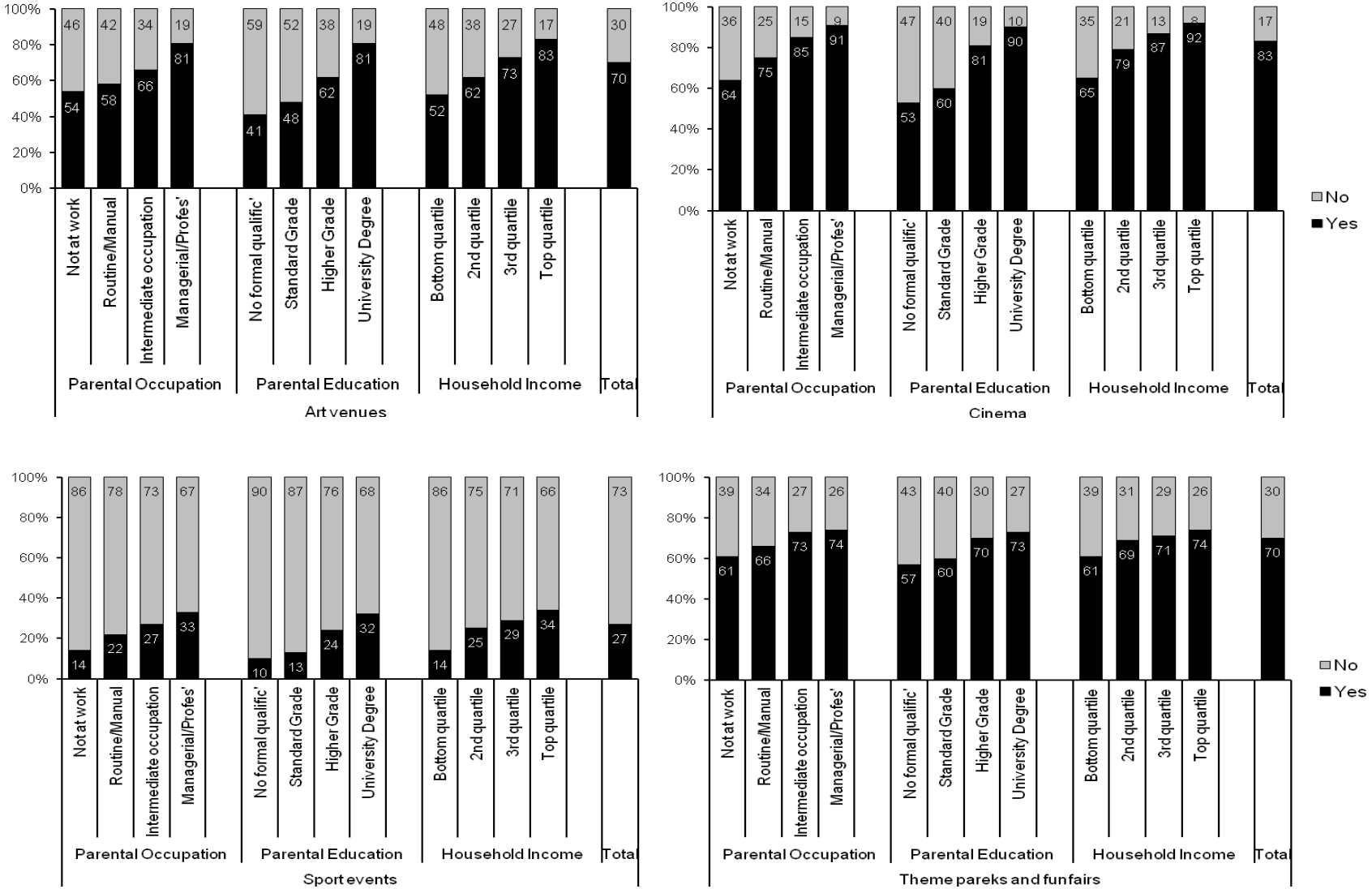


Figure 4.8, in addition, illustrates a pattern of association between SES and the 4 commercial-public OSA: there seems to be a monotonically increasing relationship between SES and the number of children who had been to the explored venues. Nevertheless, the figure indicates that the strength of association between SES and participation in these activities may differ by the type of activity under question. The SES participation gap appears somewhat larger for visits to art venues than for attendance at the cinema and at professional sport events, and considerably larger than the gap in attendance rates at theme-parks or funfairs.

To further explore the associations between SES and participation in the selected commercial-public OSA, multilevel regression models were fitted.

Models Exploring Participation in Commercial-Public OSA among Children from Dissimilar SES Groups

Table 4.5 presents results from a set of multilevel regression models estimating the associations between SES and children's attendance at art venues, the cinema, professional sport events and theme-parks/funfairs.

Model 1 considers the links between attendance at art venues, including museums and galleries, and children's SES. The null model's results are given in the bottom part of the table. The null estimations are used to gauge the magnitude of variation across wards in attendance at art venues, by estimating a model with no independent variables at either level. As can be seen, the level 2 variation is estimated as equal to 0.369, meaning that approximately 10% of the residual variance in 7-year-olds' attendance at art venues is attributable to differences across the sampled wards.

Table 4.5: Multilevel binary models estimating the associations between SES and 7-year-olds' participation in commercial-public OSA (n=12,215; *p<0.05, ** p<0.01)

	Model 1: Art venues	**Model 2: Cinema**	**Model 3: Sport events**	**Model 4: Theme- parks**
	Coeff'/S.E	Coeff'/S.E	Coeff'/S.E	Coeff'/S.E
Child, parents and household factors				
Parental occupation (Ref: Routine/manual)				
Intermediate	0.162*	0.337**	0.156*	0.213**
	(0.06)	(0.08)	(0.07)	(0.07)
Managerial	0.418**	0.438**	0.292**	0.189**
	(0.07)	(0.08)	(0.07)	(0.07)
Not working	-0.034	-0.218**	-0.222*	-0.093
	(0.07)	(0.08)	(0.09)	(0.07)
Mother's working hours	-0.000	0.011**	0.001	0.003
	(0.00)	(0.00)	(0.00)	(0.00)
Parental education (Ref: No formal qualificati')				
GCSE	0.208*	0.137	-0.112	0.108
	(0.10)	(0.10)	(0.16)	(0.10)
A-levels	0.506**	0.785**	0.448**	0.278**
	(0.08)	(0.09)	(0.13)	(0.08)
University degree	1.071**	1.076**	0.582**	0.297**
	(0.09)	(0.10)	(0.13)	(0.09)
Household income (Ref: Bottom quartile)				
2nd quartile	0.150*	0.245**	0.291**	0.140*
	(0.06)	(0.07)	(0.08)	(0.06)
3rd quartile	0.345**	0.506**	0.364**	0.193**
	(0.07)	(0.09)	(0.09)	(0.07)
Top quartile	0.694**	0.974**	0.553**	0.303**
	(0.09)	(0.11)	(0.09)	(0.08)
Child sex (Ref: Girl)				
Boy	0.091*	-0.009	1.085**	0.072
	(0.04)	(0.05)	(0.05)	(0.04)
Family characteristics				
Parenting composition (Ref: Co-parent home)				
Single-mother home	0.099	0.583**	0.007	0.194**
	(0.06)	(0.07)	(0.07)	(0.06)
Adults in household (Ref: No)				
Yes	-0.144	-0.024	-0.287**	0.144
	(0.08)	(0.09)	(0.10)	(0.08)
Children in household (Ref: One child)				
Two children	0.002	-0.161	0.060	-0.001
	(0.07)	(0.09)	(0.07)	(0.07)
Three or more children	-0.222**	-0.438**	-0.060	-0.199**
	(0.07)	(0.09)	(0.08)	(0.07)
CM meets grandparent/s (Ref: Every day/almost)				
At least once a week	0.056	-0.019	-0.202**	-0.132**
	(0.05)	(0.06)	(0.05)	(0.05)
At least once a month	0.212**	-0.067	-0.264**	-0.307**
	(0.07)	(0.08)	(0.07)	(0.06)
Never or rarely	0.095	-0.305**	-0.426**	-0.322**
	(0.06)	(0.07)	(0.07)	(0.06)
Constant	-0.449** (0.12)	0.269 (0.14)	-2.473** (0.16)	0.431** (0.12)
Ward Level Variance	0.180 (0.028)	0.116 (0.025)	0.088 (0.019)	0.063 (0.017)
Log Likelihood	-7048.14	-5335.64	-6251.72	-7358.55
VPC	0.052 (5.2%)	0.034 (3.4%)	0.026 (2.6%)	0.019 (1.9%)
Null model estimations				
Ward Level Variance –Null Model	0.369 (0.045)	0.396 (0.051)	0.188 (0.026)	0.092 (0.018)
Log Likelihood – Null Model	-7635.26	-5989.01	-6888.81	-7586.31
VPC – Null Model	0.101 (10.1%)	0.107 (10.7%)	0.054 (5.4%)	0.027 (2.7%)

However, this variance across localities decreases to 4.5% with the introduction of the level 1 independent variables. A multi-stage model building procedure that has been carried out for this thesis (see Appendix 5 Table A1) shows that this reduction results from the addition of SES: these independent variables account for approximately half of the level 2 residual variance. The remaining slight level 2 residual variance may be explained by factors such as the provision of museums/galleries in a given ward, the level of perceived safety or the availability of public transport in the locality, or by additional level 1 variables like ethnicity or the age of the cohort members' parents.

With regard to the link between SES and children's visits to art venues, Model 1 of Table 4.5 shows that parental occupational and educational levels, and familial income, are all positively associated with the likelihood of attendance at such venues. The associations are particularly strong in relation to incomes and parental education: the odds of attendance at art venues are 2 times higher for children who grow up in homes that fall into the richest 25% of households than for counterparts in the poorest 25% of households. Likewise, children who are brought up by at least one parent who obtained a university degree are about 3 times more likely to visit a museum or a gallery than children who live with parents holding no formal qualifications.

The results of Model 1 are consistent with findings from the English 2008/9 "Taking Part Survey" (TPS) on engagement in culture and sport among children, adolescents and adults (Jones et al., 2011). The TPS shows that children aged 5-10 are more likely to visit a museum, gallery or to attend a theatre performance outside the school if their parents hold a full-time job,

are highly educated or own a car, a measure of the family's economic circumstances. Similar trends have been found in a Scottish survey of secondary school students (Chamberlain, 2008, p. 12), and there is also consistency between the present findings and results from the adult population which demonstrate that individuals from high-SES groups attend art venues in greater numbers than counterparts in low-SES groups (Chan & Goldthorpe, 2007b).

As has been mentioned in the literature review section of this thesis, in the UK motivation has been expressed to promote greater social inclusion through engagement with museums and galleries (GLLAM, 2000). However, the present analysis indicates that there is considerable inequality in the attendance rates of children from dissimilar SES groups at such venues. Whether this disparity is the outcome of different means held by members of low- and high-SES groups, a result of dissimilar time-use preferences of individuals from these groups, or the consequence of other inhibitors of participation, at present a "museums for all" practice has not been fully achieved (GLLAM, 2000, p. 23).

Model 1 of Table 4.5 includes the effect of family characteristics on the odds of attendance at art venues. The model shows that there is no statistically significant association between parenting composition and the likelihood of attendance at art venues: children of single-mothers and those of partnered-mothers are equally likely to be exposed to such leisure activities. Similarly, there is no association between attendance at art venues and the number of non-parental adults in the household. By contrast, a greater number of siblings reduces the chances of attendance at such venues. In addition, the ties with grandparents show an inconsistent trend: compared

to children who meet their grandparents very frequently, the likelihood of attendance at art venues is greater for those who see the grandparents at least once a month, but not for those who see the grandparent about once a week or rarely. Overall, these results suggest that familial social ties have only a very small effect on whether or not 7-year-olds attend art venues, compared to the effects of SES, which seems to have considerable influence on attendance at such venues.

Next, Model 2 of Table 4.5 presents the results from an exploration of the relationships between SES and 7-year-olds' visits to the cinema. As has been shown in Figure 4.8, the majority of the MCS's children have been to the cinema at least once during the 12 months prior to the date of interview. This finding is consistent with other UK-based surveys which report that watching a film at the cinema is one of the most attended commercial OSA among school-age students (Chamberlain et al., 2008; Jones et al., 2011; OFSTED, 2008).

Again, the Model 2 null parameters are given in the bottom part of the relevant columns. These parameters indicate that approximately 11% of the residual variance in children's visits to the cinema is attributable to differences across the sampled wards. However, this geographical variation declines to just over 3% when SES and family characteristics are taken into account. The decline in the level 2 variance, therefore, is mainly due to SES and child's gender (see Appendix 5 Table A2). This finding echoes the results obtained in Model 1 of Table 4.5: in the case of both art venues and cinemas, addition of the child's, the parents' and the household's characteristics accounts for a large portion of the residual variation across different localities. In fact, when the SES factors are taken into account, only a

negligible variation in the rates of attendance at these commercial-public OSA remains.

In addition, Model 2 shows that, as in the case of attendance at art venues, there is a socio-economic disparity in 7-year-olds' visits to the cinema. There is a monotonically increasing relation between the odds of attendance at the cinema and parental occupation, education and income levels. Here, too, the associations between SES and whether or not a child had been to the cinema are particularly strong in relation to parental education and income. Children who live with at least one parent who is educated to university degree level are about 3 times more likely to have been to the cinema than those who have parents with no formal qualifications. Similarly, children who grow up in the richest 25% of households are about 2.5 times more likely to attend the cinema than children who live in homes that fall into the poorest income quartile. By contrast, gender doesn't seem to play a role in whether or not children attend a movie theatre: boys and girls are equally likely to go to the cinema when they are 7 years old.

Model 2 also assesses the association between selected family factors and attendance at the cinema. The results show that children of single-mothers are somewhat more likely to go to the movies than children of partnered-mothers. This finding contradicts previous results from a DCMS survey, in which no effect of the parenting composition was evident (Jones et al., 2011). By contrast, this finding is consonant with results from section 4.3.1 (pp. 181-213) of this thesis, showing that children of single-mothers are overrepresented in social-group OSA.

Returning to the present Model 2, no links were found in this instance between the likelihood of attendance at the cinema and the presence of adults other than the parents in the child's home. However, children who grow up with 3 or more siblings or those who see their grandparents rarely are less likely to go to cinemas. So, it appears that familial ties are linked to the likelihood of attendance at the cinema irrespective of SES. A large number of siblings and intact parenting composition is linked to reduced chances of attendance at movie theatres. However, the factor of close ties with the grandparents is associated with increased visits to the cinema. Considering results from section 4.3.1 (pp. 181-213), the evidence suggests that grandparents undertake unique roles in facilitating children's after-school activities.

Model 3 of Table 4.5 introduces results from the analysis of children's attendance at professional sport events as spectators. Model 3 null estimations show that, when no independent variables are taken into consideration, there is approximately 5.4% disparity across the sampled localities in the rates of children's sport spectatorship. Nevertheless, once SES measures and family characteristics are entered into the model, the ward-level variance diminishes considerably to 2.6%. This means that, after controlling for these independent variables, very little geographical difference in the proportion of children who had been to sport events is evident.

Model 3 of Table 4.5 also illustrates the impact of the child's, the parents' and the household's factors on the likelihood of attendance at a live sport event. The model shows a moderate to small positive association between children's sport spectatorship and SES: children are somewhat more

likely to go to professional sporting events if they live in well-off families, or if their parents hold a high-status job or good educational qualifications. Considering the previous results of Table 4.5, there seems to be a weaker link between SES and sport spectatorship than between SES and attendance at art venues and the cinema.

An additional result from Model 3 of Table 4.5 shows that 7-year-old boys are about 3 times more likely to attend professional sport events than same-age girls. This finding echoes results from a Scottish sample of secondary school students, in which the likelihood of boys attending live sport events at least once a month was estimated as significantly higher than that of same-age girls (Chamberlain et al., 2008, p. 23).

Model 3 of Table 4.5 also explores the influence of familial characteristics on children's sport spectatorship. The results indicate that neither single-motherhood nor number of cohort members' siblings is significantly associated with the likelihood of attendance at professional sport events. By contrast, the number of adults in the household decreases the odds of attendance at sporting events, and so do rare meetings with the grandparent/s.

Model 4 of Table 4.5 estimates the associations between SES as well as family features and children's visits to theme-parks and funfairs. In the bottom rows of Model 4 are displayed the parameter estimates from a null model. The null estimations show that there is hardly any locality effect in this case: only 2.7% of the residual variance in attendance rates at theme-parks and funfairs is attributable to differences across the wards in which children live. This variation diminishes to about 2% when the present study's selected independent variables are included, indicating that these factors

have a negligible effect on the evidently small level 2 variation. Taken together with findings from the other models of Table 4.5, it seems that there is a greater geographical effect on children's attendance at the three former commercialised OSA than on visits to theme-parks and funfairs.

Model 4 also introduces SES measures as predictors of attendance at theme-parks and funfairs among British children. In keeping with the previous results presented in Table 4.5, the likelihood of attendance at the respective commercial OSA at age 7 is positively associated with parental education level, occupational status and familial incomes. This means that the socio-economic inequality in 7-year-olds' attendance at commercial OSA exists for all four examples that have been chosen for this study: children who live in better-off families, with highly-educated parents or with parents from the upper and middle class are more likely to attend art venues, cinemas, live sports events, theme-parks and funfairs. Nevertheless, the association between SES and the odds of attendance is weaker for theme-parks than for the other three OSA within the commercial-public category.

Finally, Model 4 tests the links between family features and 7-year-olds' attendance at theme-parks and funfairs. The results show, firstly, that children of single-mothers are somewhat more likely to attend these activities than children of partnered-mothers; and secondly, that there is no statistically significant effect of sharing the household with adults other than the parents on attendance at theme-parks and funfairs. Conversely, the odds of attendance at the respective venues are negatively associated, although to a small degree, with being raised in families with a large number of siblings as well as with meeting grandparents infrequently.

The association between SES and British school-age children's participation in commercial-public OSA can now be summarised and discussed.

4.3.4 Summary: Participation in Commercial-Public OSA among Children from Dissimilar SES Groups

A good deal of UK-based research has been conducted in past years to explore the socio-economic disparity in the engagement of individuals aged 16 or over in commercial-public leisure activities (e.g., Chan & Goldthorpe, 2005, 2007a, 2007b; Gayo-Cal et al., 2006; Gayo-Cal, 2006; Gershuny, 2011; Le-Roux et al., 2008; Silva, 2006, 2008; Warde & Bennett, 2008; Wright, 2006). However, there is only a handful of empirical works investigating the links between SES and British school-age children's participation in commercial-public OSA (e.g., Ferragina et al., 2013; Jones et al., 2011). This is the case even though both the British and Scottish governments pledged to work for greater inclusion of children from low-SES groups in society through "widening access to culture" (Chamberlain et al., 2008, p. 8) and expressed a commitment to target "social barriers which need to be broken down to promote access to full and equal participation in all aspects of community life" (DCMS, 1999, p. 67).

Section 4.3.3 has presented the results of analyses exploring whether socio-economic inequality exists in British 7-year-olds' attendance at a selected range of commercial-public OSA, namely art venues, cinema, professional sport events, theme-parks and funfairs.

The analyses show, firstly, that there is some geographical variation in children's attendance at commercial leisure OSA. This locality variation is

greater for visits to art-venues and the cinema than for sport spectatorship and attendance at theme-parks or funfairs. However, the locality variation estimations evident in the null models reduce to 5.2%, 3.4%, 2.8% and 2.0% (respectively) after children's SES, gender and family structure are taken into account. This suggests that, in fact, there is very little geographical variation in the likelihood of 7-year-olds' participation in the explored OSA which cannot be explained by the included individual level characteristics.

In addition, the analyses of section 4.3.3 showed that participation propensity in the four explored OSA rises with parental occupational status, parental education level and familial incomes. Although not perfectly linear, the models of Table 4.5 demonstrate a monotonically increasing relationship between the odds of participation in the four discussed leisure activities and the mentioned SES factors. These findings indicate that children who grow up in high-SES families compared to counterparts who live in low-SES homes are more likely to be exposed to a range of commercial-public OSA.

However, the same models show that the "magnitude" or "strength" of the association between participation in the examined commercial-public OSA and children's SES depends on the type of activity in question. The greatest socio-economic disparity is found in relation to attendance at art venues and visits to the cinema, whereas spectatorship of professional sport events, and even more so visits to theme-parks and funfairs, is less strongly associated with children's SES.

The results can now be used to discuss the debate on the "homology" vs. "omnivore-univore" hypotheses presented earlier in Chapter 2, in the context of the middle childhood years.

Participation in Commercial-Public OSA among British School-Age Children: Exploring the "Homology" vs. "Omnivore-Univore" Hypotheses Debate

Currently in the UK academic milieu, there is a debate as to whether the link between SES and adults' participation in cultural activities conform to a structural homology rule (Bourdieu, 1984), or present a pattern best characterised as an "omnivore-univore" distinction (Peterson, 1992). The dispute surrounds the issue of whether in 21st-century British society, cultural participation (and consumption) still signifies social class, and if so, in what ways (see section 2.3.6, pp. 44-52). However, researchers have yet to analyse class-based patterns of cultural participation in children. Such analyses are absent, even though intergenerational transmission of cultural practices is a key point of interest among scholars exploring cultural reproduction, while, as noted by Turley (2001), children may very well act as a "catalyst in generating a family visit (repeat or first-time) to an attraction …" (p. 2).

A comparison between the various models of Table 4.5 provides the following evidence:

- In the four investigated commercial-public OSA, namely attendance at art venues, visits to the cinema, spectatorship of professional sport events, and attendance at theme-parks/funfairs, a monotonically increasing relationship between SES and children's chances of attending the respective activity is evident. In accordance with Peterson's point of view, this finding provides no evidence of a definite class-based "aesthetic exclusivity" (Peterson, 1992, p. 249). The finding suggests that children in high-SES groups, but less so low-SES counterparts, exhibit an omnivorous participation pattern: their greater participation in commercial OSA is not

restricted to attendance at highbrow activities, measured here by visits to art venues. Rather, children in high-SES groups are also overrepresented in activities that can generally be characterised as more midbrow and lowbrow in nature, such as visits to the cinema, sport spectatorship and attendance at theme-parks and funfairs. At the same time, a large number of children from low-SES families attend a more restricted range of activities, hence presenting a "univore" pattern of cultural participation.

- Nevertheless, the associations between SES and commercial OSA are stronger for attendance at art venues and visits to the cinema than for professional sport spectatorship, which in turn is more strongly linked to SES than attendance at theme-parks and funfairs. This finding lends weight to Bourdieu's homology perspective as it shows that the probability of children who grow up in high-SES families participating in commercial/public OSA is greater for activities characterised as highbrow and midbrow than for lowbrow activities. So, in keeping with the traditional cultural capital framework, the results provide an example of an early-age socialisation into class-based cultural participation.

Taking a broader view of these results, it could be argued that the pattern of socio-economic stratification in children's participation in commercial/public OSA does not fully correspond to either Peterson's (1996) "omnivore-univore" model or Bourdieu's (1984) "structural homology" hypothesis. While children's attendance at art venues shows a strong hierarchical SES gradient, giving support to Bourdieu's homology argument, children in high-SES groups participate in greater numbers in activities from across the highbrow-lowbrow spectrum. Thus, it seems that the class-based cultural socialisation of children operates on two axes. Firstly, it operates on

a horizontal "omnivore-univore" axis, which represents the number of different cultural activities a child is engaged in, but not whether these activities are highbrow or lowbrow in terms of the cultural capital associated with them. Secondly, it operates on a vertical "highbrow-lowbrow" axis, which refers to whether a child tends to participate in highbrow or lowbrow activities.

It should be noted, though, that the results reported here allow only preliminary theoretical inferences to be made, inferences that are by no means complete. Much more research is needed to establish whether British children's participation in commercial/public OSA reflect the divisions in social class, educational levels and incomes.

Social Capital and School-age Children's Participation in Commercial-Public OSA

The links between the family structure and children's participation in commercial-public OSA were also explored in the previous section. The results show, firstly, that children of single-mothers are somewhat more likely to have been to the cinema as well as to theme-parks or funfairs than children of partnered-mothers. No similar associations were found in relation to the links between parenting composition and attendance at art venues and professional sport events. This result corresponded to earlier findings presented in section 4.3.1 in which participation in social-group OSA has been explored. Overall, results from sections 4.3.1 and 4.3.3 indicate that, after controlling for SES, beyond simple childcare issues, the "lack" of bonding social capital which may result from not having a second parent in the household appears to be associated with greater participation of the child

in leisure activities outside the home environment. However, this may lead to the accumulation of greater bridging ties and involvement in the wider community through interaction of the child and his/her mother with non-familial members.

Similarly, the negative associations that were found between participation in some of the four explored commercial-public leisure OSA and the number of siblings and non-parental adults at home, as well as having more frequent meetings of the cohort members with their grandparents, all point to the possibility that large stocks of bonding social capital within the family are linked to reduced probability of participation in leisure activities outside the home environment.

Overall, these results lend weight to the idea that large stocks of bonding social capital within the family are generally linked to decreased levels of participation in OSA outside the home environment. Of course, there could be a number of reasons for this. It could be that the availability of such ties offers a range of relative-based leisure and recreation options in the home environment and lessens the need to fill in the after-school free time by attendance at either social-group or commercial OSA. Another explanation could be that, for larger families, attendance at social-group or commercial OSA requires investment of greater resources, such as money and time, which imposes constraints and hinders participation.

4.3.5 Participation in Home-Centred Leisure Activities

The final results of Chapter 4 relate to children's engagement in home-centred leisure activities. As stated earlier in section 2.5.4 (pp. 108-19),

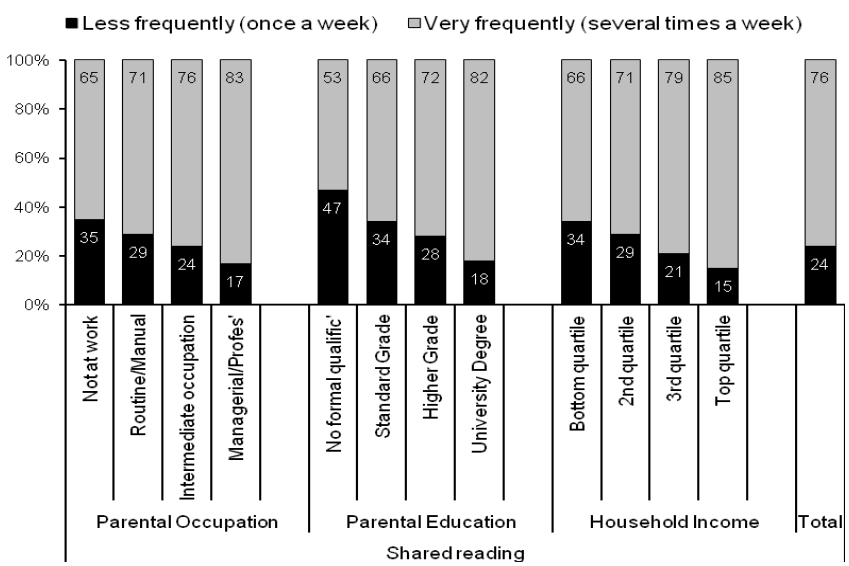
this thesis has adopted a multifaceted definition of home-centred leisure activities which includes a range of experiences that a child encounters and interacts with in the home environment. The definition includes: parent and child shared reading and creative activities, parent and child joint indoor play, and child's usage of electronic media.

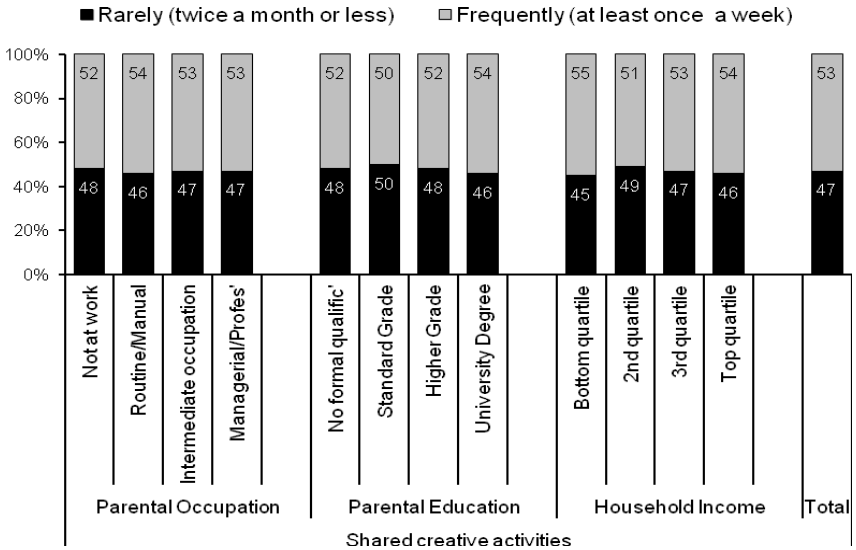
Again, the four home-centred activities were selected to broadly represent a range of cultural capital levels: highbrow, midbrow and lowbrow, correspondingly.

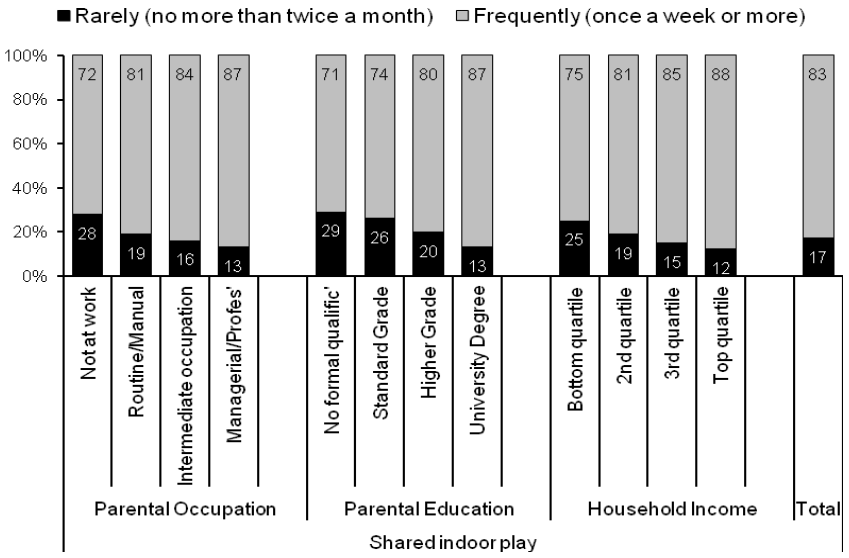
Descriptive Results

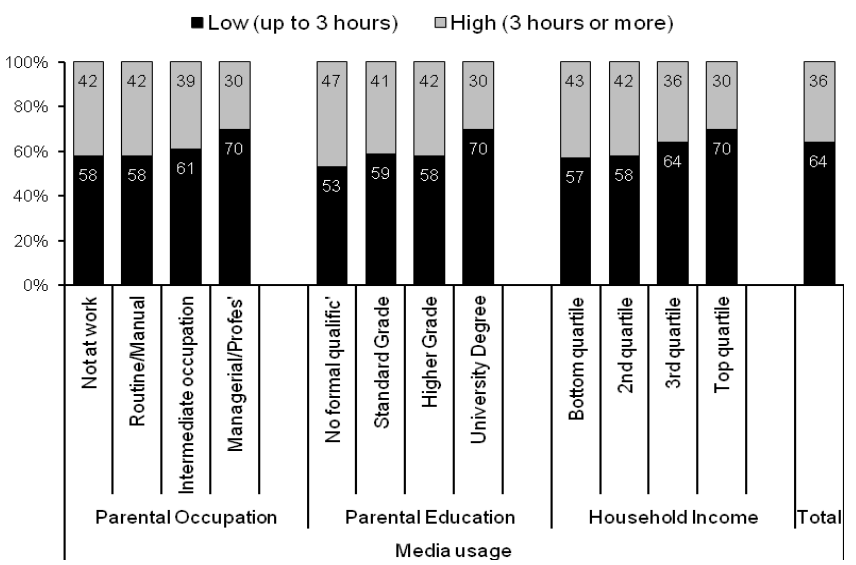
Figure 4.9 displays the four home-centred activities that were chosen for the following section. The figure shows that, among 7-year-olds, 76% of the children were read to by their parents or looked at a book with the parent several times a week or every day. The remaining 24% of children, as parents reported, were engaged in joint reading once a week or less frequently. Overall, the level of reported joint reading activities in both groups indicated that parents engage in this activity frequently: for most children the daily routine involves shared reading. Nevertheless, it appears that there is a monotonically increasing relationship between SES and the number of children in the "very frequently" engaged group, with children in high-SES families overrepresented in this category.

Figure 4.9: Engagement in home-centred activities at age 7, by SES (weighted, N= between 12,396 & 12,174)









In regard to the level of engagement in shared creative activities, Figure 4.9 demonstrates what appears to be a lack of association with SES. There are a more or less equal number of children from the different SES groups among those who practise arts and crafts with their parents twice a month or less, and among those who pursue such activities once a week or more frequently.

The trend for joint indoor play is comparable to that present in relation to shared reading: 83% of the children are in the high-engagement category, but the number of children in this category rises with their SES. So, the majority of 7-year-olds play indoors with their parents at least once a week, but it seems that this routine is more prevalent in higher-SES families.

By contrast, when electronic media usage is considered, the number of children in the highly engaged category decreases with parental education, occupation and income levels. Among those who play computer games and watch TV more than 3 hours a day, there is overrepresentation of children from low-SES families.

To explore these gradients further, results from multilevel regression models are now presented.

Multilevel Models

Table 4.6 displays a set of multilevel regression models investigating the likelihood of 7-year-olds being frequently engaged in four home-centred leisure activities, given a set of SES factors and family features. The multistage models are presented in Appendix 5 (Tables A5-A8).

Model 1 of Table 4.6 reports the results of predicting a high level of parent-child shared reading in the home environment. Parameter estimations from a related null model are given in the bottom part of the table. From these estimates it can be seen that there is a very small (4.5%) variation across the sampled wards in the proportion of children who were highly engaged in shared reading with their parents.

This variation, however, diminishes by more than a half when SES factors and family features are introduced, setting the level 2 residual variance at only 2.2%. That means that, once key socio-economic characteristics are taken into account, there is hardly any unexplained geographical variation related to the level of engagement in the discussed activity.

In Table 4.6, the Model 1 results also show that there are positive associations between the extent to which the "parent-child" dyad is engaged in shared reading and parents' occupational status, educational qualifications and income levels. Among the three SES variables, it appears that parents' education is the most important predictor of whether or not children will be highly engaged in that activity, whereas income level and job status are less strongly linked to the frequency of engagement in shared reading. These results correspond to the literature reviewed earlier in section 2.5.4 (p.108), which presented evidence of more active and extensive reading habits of parent-child dyads in families characterised by high SES (i.e., Bianchi & Robinson, 1997; Hartas, 2011; Hofferth & Sandberg, 2001).

Table 4.6: Multilevel binary models estimating the associations between SES and participation in home-centred activities at age 7 (n=12,336; *p<0.05,**p<0.01)

	Model 1: Shared reading Coeff'/S.E	**Model 2: Shared creative** Coeff'/S.E	**Model 3: Joint indoor play** Coeff'/S.E	**Model 4: Electronic media usage** Coeff'/S.E
Child, parents and household factors				
Parental occupation (Ref: Routine/manual)				
Intermediate	0.091	-0.020	0.046	-0.046
	(0.07)	(0.06)	(0.08)	(0.06)
Managerial	0.230**	-0.088	0.241**	-0.230**
	(0.07)	(0.06)	(0.08)	(0.06)
Not working	-0.288**	-0.070	-0.352**	0.159*
	(0.07)	(0.07)	(0.08)	(0.07)
Mother's working hours	-0.014**	-0.005***	-0.009**	0.007**
	(0.00)	(0.00)	(0.00)	(0.00)
Parental education (Ref: No formal qualificat')				
GCSE	0.246*	-0.003	-0.169	-0.217*
	(0.10)	(0.10)	(0.11)	(0.10)
A-levels	0.464**	0.012	0.037	-0.200*
	(0.08)	(0.08)	(0.09)	(0.08)
University degree	0.824**	0.175*	0.263**	-0.395**
	(0.09)	(0.09)	(0.10)	(0.09)
Household income (Ref: Bottom quartile)				
2nd quartile	-0.043	-0.253**	-0.131	-0.076
	(0.06)	(0.06)	(0.07)	(0.06)
3rd quartile	0.182*	-0.311**	-0.131	-0.174*
	(0.08)	(0.07)	(0.09)	(0.07)
Top quartile	0.418**	-0.293**	-0.112	-0.362**
	(0.09)	(0.08)	(0.10)	(0.08)
Child sex (Ref: Girl)				
Boy	-0.005	-0.279**	0.181**	0.612**
	(0.04)	(0.04)	(0.05)	(0.04)
Family characteristics				
Parenting composition (Ref: Co-parent home)				
Single-mother home	-0.200**	-0.517**	-0.936**	-0.187**
	(0.06)	(0.05)	(0.06)	(0.06)
Adults in household (Ref: No)				
Yes	-0.170*	-0.160*	-0.133	0.044
	(0.08)	(0.07)	(0.09)	(0.08)
Children in household (Ref: One child)				
Two children	-0.215**	-0.253**	-0.467**	0.055
	(0.07)	(0.06)	(0.09)	(0.06)
Three or more children	-0.458**	-0.478**	-0.879**	-0.137*
	(0.07)	(0.06)	(0.09)	(0.07)
CM meets grandparent/s (Ref: Every day/almost)				
At least once a week	-0.051	-0.255**	-0.053	-0.028
	(0.05)	(0.05)	(0.06)	(0.05)
At least once a month	-0.147*	-0.354**	-0.344**	-0.098
	(0.07)	(0.06)	(0.08)	(0.06)
Never or rarely	-0.126*	-0.201**	-0.346**	-0.224**
	(0.06)	(0.05)	(0.07)	(0.06)
Constant	0.960** (0.12)	1.168** (0.12)	2.548** (0.15)	-0.317** (0.12)
Ward Level Variance	0.075 (0.018)	0.059 (0.013)	0.092 (0.023)	0.119 (0.021)
VPC	0.022 (2.2%)	0.018 (1.8%)	0.027 (2.7%)	0.035 (3.5%)
Log Likelihood	-6776.67	-8373.45	-5529.25	-7894.75
Null model estimations				
Ward Level Variance –Null Model	0.155 (0.025)	0.064 (0.014)	0.146 (0.027)	0.182 (0.026)
VPC – Null Model	0.045 (4.5%)	0.018 (1.8%)	0.043 (4.3%)	0.052 (5.2%)
Log Likelihood – Null Model	-7161.24	-8657.46	-5932.38	-8217.46

From Model 1, it can also be seen that maternal working hours are negatively associated with the level of engagement in parent-child reading: the longer mothers are at work, the less likely their children are to be in the "very frequently" engaged category. It could be that long working hours, alongside domestic and other responsibilities mothers undertake, limit the time left for them to spend with the child in leisure activities in the home.

Model 1, in addition, investigates the "net" effect of several family characteristics on whether or not children will be highly engaged in shared reading. The results show that there is a significant negative effect of all the included family independent variables on the likelihood of being very frequently engaged in shared reading. This means that children are less likely to be engaged in shared reading on a daily basis if they live with a single-mother or with a large number of either adults or siblings, or if they rarely meet their grandparents.

With reference to results from sections 4.3.1 and 4.3.3, it can be seen, firstly, that while single-motherhood is related to increased likelihood of attendance at a range of social-group and commercial-leisure out-of-school activities, the opposite is evident in regard to 7-year-olds' engagement in shared reading. Secondly, it is evident that, as in the case of activities in the former two categories (with the exception of attendance at PA clubs), children who grow up in large nuclear families, or have infrequent meetings with their grandparents, are less likely to be engaged in shared reading for an extended amount of time.

Next, Model 2 of Table 4.6 introduces results relating to children's engagement in shared creative activities. The null parameter estimates for Model 2 can be seen at the bottom of the table, and these suggest that there is

a negligible ward level variation in the proportion of children who were highly engaged in creative activities: less than 2% of the residual variance in engagement level is attributable to the wards in which the sampled children reside.

Model 2 of Table 4.6 demonstrates that there is no significant relationship between parental job status and the level at which their children are engaged in shared creative activities. There is, however, a small positive effect of parental level of education on engagement in the activity in question. Yet, even though this effect is statistically significant, it is minor and applies only to children of parents who are educated to university degree level. Conversely, modest negative associations are evident between familial income as well as mothers' working hours on the level of engagement: the higher the family's income is, and the longer mothers are at work, the less likely is the child-parent dyad to be in the "frequently engaged" category. The final finding lends further support to the notion that mothers in full-time jobs face time constraints that limit their opportunity to join their children in shared leisure activities at home. It may also be that mothers' engagement in home-centred activities is inhibited by their involvement in facilitating and overseeing children's out-of-school social-group activities.

Model 2 of Table 4.6, furthermore, reveals that there is a gender variance in the likelihood of being engaged in shared creative activities in the home environment, with girls being more likely than boys to engage at a high level in that activity. The model, next, illustrates that all the included family features are associated with decreased chances of practising arts and crafts with the parents on a daily basis. More specifically: being a child of a

single-mother, being a member of a large family, and infrequent meetings with grandparents, all correspond to lower odds of falling into the highly engaged category.

Model 3 of Table 4.6 considers the child-parent joint engagement in indoor play. According to the null parameters, there is a very small level 2 variation in the frequency of engagement in the activity in question (4.3%), which diminishes to about 2.7% with the introduction of the SES and family features.

With reference to SES, the estimations of Model 3 are indicative of a small positive effect of parental social class and level of education on the odds of children being in the highly engaged category, as well as a lack of significant effect from familial income. These results indicate that whether children play indoors with their parents on a daily basis or less frequently is rather weakly related to their SES.

As with the two prior examples explored in the home-centred activities category, Model 3 indicates that children of mothers who work long hours are less likely than those of mothers who work shorter hours to be highly engaged in joint indoor play. Also, boys are more likely than girls to play every day with their parents, although the difference between the two genders is fairly small.

Family characteristics in Model 3 of Table 4.6 are consistent with prior results obtained for the home-centred activities explored in the present study. Children have better opportunities to play indoors with their parents frequently if they are brought up in a co-parent household, or live with a small number of siblings and adults, or if they meet their grandparents regularly. Of course, this finding does not indicate that children who have

extended non-parental ties are less engaged in indoor play. It could be that the availability of such ties provides the cohort members with opportunities to engage in play with siblings or with other members of the family, and thus reduces the time these children spend engaged in play with the parents.

In the final model of Table 4.6, the extent to which 7-year-olds use electronic media at home is examined. This category includes playing computer games, surfing the web, watching programmes on TV or DVD, and other activities which involve use of the computer or the television and which are carried out either alone or with other family members.

The null model indicators show a 5.2% disparity in the level of electronic media usage across the sample's wards. However, the introduction of the independent variables of interest reduces the ward level residual variance to only 3.2%.

Model 4, additionally, demonstrates a negative association between SES and the number of hours 7-year-olds spend in an average day using electronic media. That is: compared to children of parents with routine/manual jobs, children of non-working parents are more likely to be in the "high users" category, while the opposite is evident for children of parents who hold managerial/professional jobs. Similarly, there is a monotonically decreasing relationship between the child's chances of using electronic media for an extended number of hours a day and parental education and income.

As can be seen, maternal working hours are positively linked to how much time children spend on electronic activities in the home environment: the longer the mothers' working hours, the greater their children's chances are of being included in the "highly engaged" category. Taken together with

prior results, this finding indicates that children of mothers who work long hours are less likely to experience high volumes of shared reading, creative activities or joint indoor play, and more likely to spend many hours using electronic media. Also, boys are more likely to be in the highly engaged category with respect to electronic media usage.

Finally, Model 4 finds that single-motherhood is associated with lower levels of electronic media usage. So, too, are belonging to a family with 3 or more siblings and meeting with grandparents rarely or not at all.

The findings displayed in Table 4.6 can now be summarised and discussed.

4.3.6 Summary: SES and Children's Engagement in Home-Centred Leisure Activities

There has recently been steady growth in the number of British studies which explore socio-economic disparities in children's engagement in various home-centred activities (e.g., Bromley, 2009; Hartas, 2011, 2012; Melhuish, 2010; Siraj-Blatchford, 2010; Sylva et al., 2012). The growing scholastic interest in the effects of the home environment on the accumulation of skills in the childhood years complements the British government's pledge to support parents in developing more active and effective parenting practices through participation in targeted family learning programmes (Big Lottery Fund, 2006; Estyn, 2012; Grimshaw & McGuire, 1998; Lamb et al., 2009; Ranson & Rutledge, 2005; Scott et al., 2006).

In keeping with earlier international and British studies (i.e., Bianchi & Robinson, 1997; Bodovski & Farkas, 2008; Bromley, 2009; Craig & Mullan,

2012; Ferragina et al., 2013; Hartas, 2012; Hofferth & Sandberg, 2001; Vandermaas-Peeler et al., 2009), the analyses shown in Table 4.6 indicate that the frequency of engagement in home-centred leisure activities is related to SES. However, the direction and strength of the associations between SES and engagement in home-centred leisure activity depends on the type of activity in question.

At age 7, the propensity to be highly engaged in parent-child shared reading, shared creative activities and joint indoor play rises with parental occupational status and parental level of education. There is also a positive association between the family's income and the level of engagement in parent-child shared reading. By contrast, being in higher-SES categories reduces the chance of spending many hours engaged in electronic media usage.

The models in Table 4.6 also show that mother's working hours and the cohort member's gender are linked to the frequency of participation in these activities: children with mothers who work long hours are less likely to be highly engaged in the three shared activities and more likely to be highly engaged in electronic media usage. Boys are more likely than girls to be highly engaged in joint indoor play and media usage, but less likely to pursue arts and crafts with their parents on a daily basis.

The findings suggest that the most profound link between SES and children's engagement relates to the frequency with which the parent-child dyad reads together, and that, although all 3 SES factors are positively associated with shared reading, parental education is the strongest predictor of whether the child will be in the highly engaged category. In comparison, it appears that media usage is modestly and negatively linked to SES, while

there is only weak socio-economic disparity in the level of children's engagement in shared creative activities and joint indoor play.

In what follows, these findings are discussed in the context of the accumulation of cultural capital in the middle childhood years.

The Home Environment as a Source of Cultural Capital for School-Age Children

Theorists and researchers of cultural reproduction and its implications for social inequality argue that the ways in which parents and children interact in the home environment, and the activities they undertake within the family, are critical for the accumulation of cultural capital and the development of class-based habitus: an internalised sense of likes and dislikes towards particular cultural forms (Becker, 2010; Bourdieu, 1984, 1986; Hartas, 2012; Lareau, 2003).

Lareau (2003), who concentrated primarily on class-based patterns of participation in organised activities, argued that parents in dissimilar social class groups encourage their children to attend dissimilar activities. In turn, this differentiation plays a significant role in transferring cultural capital from parents to offspring.

In particular, Lareau (2003) suggests, the strategy of "concerted cultivation" employed by high-SES parents, which incorporates strong intervention in facilitating and overseeing children's engagement in leisure activities outside the school, creates positive developmental impacts on children from these families. By contrast, the "accomplishment of natural growth" strategy utilised by parents in lower-SES groups, and which involves granting the child a high level of autonomy in deciding on the use

of his or her out-of-school leisure time, brings fewer developmental advantages to children in these groups. According to this line of thinking, in high-SES homes the intergenerational transfer of superior cultural capital begins in early childhood, with children developing familiarity with, and preference for, dominant cultural activities and genres, in addition to mastering class-based practices.

In cultural capital research, reading is widely accepted as an example of a highbrow activity, and elaborated or extended reading habits are frequently featured as measures of cultural capital (i.e., Hartas, 2011, 2012; Jaeger, 2011; Kane, 2004; Robson, 2009; Wright, 2006).

Building on this tradition, the present study introduced parent-child shared reading to capture children's tendency to engage in highbrow activity which is associated with increased levels of cultural capital. In comparison, based on their distance from "everyday life" practices, shared creative activities have been used as an indication of engagement in a more midbrow cultural activity, and joint indoor play and media usage as measures of more lowbrow activities, associated with reduced levels of cultural capital.

In keeping with the cultural reproduction theory, the results of Table 4.6 indicate the emergence of distinct socio-economic patterns of engagement in leisure activities in the home environment: while high-SES children demonstrate greater engagement in parent-child shared reading than peers in low-SES groups, these children also avoid frequent usage of electronic media. Thus, building on Bourdieu's ideas, it could be argued that, by encouraging engagement in particular activities at home and inhibiting the uptake of others, parents in high-SES groups transfer cultural capital to their children. This cultural capital not only signifies the children's class

membership, but also equips them with important symbolic tools that make possible the perpetuation of privileges such as academic success as well as preparation for achieving future advantages such as better job market outcomes.

Moreover, following Lareau's (2003) arguments, it could be maintained that the advantages transferred to children through engagement in shared activities in the home environment result not only from the type of activity undertaken, but also from the cultural practice embodied in the parent-child interaction. One example given by Lareau (2003) is the use of language in high-SES families, which is characterised by reasoning and extended negotiations between parents and children and which equip the child with a "sense of entitlement" rather than with a "sense of powerlessness and constraint". Thus, it is possible that cultural capital in high-SES families is created not only by the greater levels of engagement in highbrow home activities, but also by the verbal communication that takes place between parents and children throughout participation in shared activities from across the highbrow-lowbrow range.

However, the question of whether engagement in these activities creates cultural capital and brings academic gains for children will be addressed in the next part of this thesis.

4.4 Discussion: Participation in OSA among Children with Dissimilar SES

Chapter 4 explored the question of whether in Britain there is a socio-economic disparity in school-age children's participation in three categories

of leisure activities, namely, social-group, commercial-public and home-centred activities.

Within each of these leisure domains, a range of activities has been examined, broadly representing the highbrow-lowbrow cultural capital spectrum. Overall, the likelihood of participation in 11 distinct activities has been estimated, given children's SES and accounting for family features and geographical variation.

Results from regression models presented in Tables 4.1 to 4.6 show that within each of the leisure domains in question, children in high- and low-SES groups differ in their chances of attending the examined activities or in the degree to which they engage in these activities.

With reference to all 7 activities within the social-group and commercial-public leisure domains, the chances of attending the respective activity, or of engaging in the activity at a high level, rise with parental occupational status, parental educational level and familial income. The results regarding the connection between SES and leisure activities undertaken in the home environment are mixed. High SES is related to greater likelihood of being highly engaged in parent-child shared reading as well as in joint indoor play, and lower chances of extended usage of electronic media. No coherent trend was found in relation to the level of engagement in shared creative activities among children from dissimilar SES groups.

Nevertheless, the results as a whole indicate that children who are socio-economically advantaged are more likely to be exposed to a wide range of leisure experiences outside the school day. This is especially the case when

participation in organised adult-led activities and commercialised "paid-for" activities are under review.

A closer look at the associations between participation in the three leisure domains and the different SES indicators chosen for the present study suggests that parental occupation has a weaker "net" effect on the odds of attendance than familial income and parental education. Nevertheless, in most cases, each of these SES dimensions makes a unique contribution to estimating whether or not, or to what extent, a 7-year-old boy or girl will attend leisure activities.

Since the SES dimensions are correlated (see Appendix 1), children may suffer multiple disadvantages in relation to their leisure experiences. For example, children who live in a household with income that falls into the 25% highest-earning category, and have a parent with a university degree and a managerial or professional job, are about 6.5 times more likely to attend sport or PA club or visit an art venue than peers who grow up in the 25% poorest households and who also have parents with routine/manual jobs and no formal qualifications. Similarly, the former group of children, compared to counterparts in the latter group, are nearly 5 times more likely to read with their parents on a daily basis.

4.4.1 Participation in OSA, SES and the Acquisition of Cultural Capital in the Middle Childhood Years

In keeping with the theoretical ideas presented in section 2.3 (pp. 23-53), the results of Chapter 4 indicate that participation in activities outside the school and in the home environment constitute a pathway through which

parents with high SES transfer cultural capital to their children and influence their emerging habitus.

With reference to the social-group and commercial-public leisure domains, but not in the home-centred activities category, the findings indicate that children living in high-SES homes are more likely to participate in activities across the highbrow-lowbrow spectrum than counterparts who grow up in lower-SES families. This pattern of participation is consistent with Peterson's (1992) "omnivore-univore" distinction and echoes several UK-based studies which explored the links between class and cultural participation in adults aged 16 and above (Chan & Goldthorpe, 2005, 2006, 2007a, 2007b).

Yet, the results of Chapter 4 also suggest that the strength of associations between SES and the chances of participation in social-group and commercial-public OSA is greater for highbrow than lowbrow activities. Furthermore, a closer look at the home-centred activities indicates that, while there is little association between SES and midbrow activities, children with high-SES parents, compared to peers with low-SES parents, tend to be more frequently engaged in the "highbrow" shared reading activity and less frequently engaged in "lowbrow" electronic media usage. This finding lends support to Bourdieu's (10984) "homology" hypothesis and echoes research into cultural participation and consumption among British adults (Gayo-Cal et al., 2006; Gayo-Cal, 2006; Warde et al., 2007; Wright, 2006).

Bennett and Silva (2006), with regard to British adults, proposed that, while members of the upper class do not abandon the highbrow genres, they now also take part in more popular activities and are able to show appreciation and knowledge of both highbrow and lowbrow cultural forms.

Findings from the present study suggest that this trend also exists in relation to participation in OSA in middle childhood.

In addition, the results of Chapter 4 provide support for Lareau's (2003) argument that parents with high SES, more than parents with low SES, apply a "concerted cultivation" childrearing strategy. This strategy involves a high level of parental intervention in constructing and supervising the child's out-of-school free time, which is generally organised around skill-building activities that allow particular talents and skills to be fostered.

But, while the high-SES parents' "concerted cultivation" orientation is evident in all 3 leisure domains, it could be that these parents demonstrate such childrearing practice in greater numbers than low-SES counterparts not because they hold different views as to the nature of childhood or their parental role. Rather, it is possible that the differences in the level of "concerted cultivation" exhibited by parents from high- and low-SES groups demonstrate the greater barriers to participation faced by parents in the low-SES group. However, regardless of the reasons underlying the evident disparity in children's participation in OSA, the results indicate that 7-year-olds who grow up in high-SES families are likely to acquire a greater stock of cultural capital than same-age children who are raised by lower-SES parents.

4.4.2 Social Capital and Participation in OSA in the Middle Childhood Years

In addition to examining the acquisition of cultural capital among British 7-year-olds from dissimilar SES groups, Chapter 4's findings can be discussed in the light of the social capital theory.

The results presented throughout the chapter show, firstly, that children of single-mothers are generally more likely to attend social-group and commercial-public OSA than those who live in co-parent families. A reverse trend is evident in relation to the links between family formation and home-centred activities: children of single-mothers are less likely to be highly engaged in shared-reading, shared creative activities, or joint indoor play, and more likely to spend extended time using electronic media. Traditionally in the social capital literature, single-parent families are considered to have less social capital than co-parent families (Coleman, 1988). Findings from the present research indicate, however, that even if, indeed, children of single-mothers "lack" bonding social capital, they may have more opportunities than children of partnered-mothers to build up bridging social capital, through participation in social-group and commercial-public OSA. Of course, participation in such activities can also strengthen already existing ties with close friends and enrich the single-mothers' children's bonding social capital.

There is further evidence in Chapter 4 that greater familial bonding social capital is linked to lower likelihood of participation in social-group and commercial-public OSA, as well as in shared home activities with the parents. This is shown by the negative association between participation and the number of siblings and adults in the household: children who have a large number of siblings, or who live with non-parental adults, are less likely to participate in a range of leisure activities. So, having large stocks of bonding social capital may in fact hinder children's opportunities to acquire bridging social capital through participation in leisure activities outside the school and the home environment. However, the current study also shows

that frequent meeting with the grandparents is linked to greater chances of attending commercial-public OSA, engagement in shared home activities and participation in PA clubs. Thus, in some cases, the availability of grandparental childcare may create more opportunities to engage in the discussed activities.

More research is needed into the implications of familial and non-familial ties for participation, as well as into how different types of social capital are built up through participation in different OSA.

Chapter 5 – Exploring the Associations between Participation in OSA and Children's Academic Outcomes

5.1 Introduction

The present chapter addresses the second and third research questions of this thesis: it explores whether participation in OSA is associated with children's academic outcomes, taking into account their SES and family features and whether the association between participation in OSA and children's academic development in middle childhood varies across different SES groups.

In answering these research questions, the present study has the following objectives:

- To explore the independent ("net") effect of participation in various types of OSA on school-age children's academic performance and development, while key socio-economic factors and family characteristics are statistically controlled;
- To assess whether there are interactions between participation in various OSA and SES, in relation to academic development in the middle childhood;
- To shed light on how children's participation in various OSA might impact on the socio-economic stratification of academic outcomes: could participation in these activities widen, narrow or simply maintain the academic achievement gap among children from dissimilar SES groups?

- To provide an indication of whether school-age children's participation in OSA corresponds to the cultural reproduction hypothesis or, conversely, to the social mobility argument;
- To gain insight into whether participation in highbrow activities, associated with increased levels of cultural capital, is linked to greater academic returns than lowbrow leisure OSA;
- To offer a socio-cultural explanation of the associations between participation in leisure OSA and the academic outcomes of school-age children.

Chapter 5 is laid out as follows. The next section (5.2) begins with a reminder of the variables and the analytic strategy that were used to answer research questions 2 and 3. Section 5.3 then presents results from models in which the associations between participation in OSA and the cohort children's academic performance at age 7 as well as their academic development between age 5 and 7, were explored. Finally, section 5.4 offers an integrative discussion of the results.

5.2 Variables and Analytic Strategy

The dependent variables in Chapter 5 concern the following academic outcomes: a) Verbal performance, as measured at age 7; b) Non-verbal performance, as measured at age 7; and c) Teacher's assessment at age 7.

The first set of independent variables in this chapter considers children's individual, familial and household SES, including: Parents'

occupational status; Mother's working hours; Parents' educational qualifications; Household income, and Child's gender. The second set of independent variables concerns particular school and educational indicators. These are: School type and absenteeism from school.

The third set of independent variables used in Chapter 5 focuses on children's participation in the various OSA that have been described in detail in section 3.4 (pp. 142-151). This includes: Participation in social-group OSA (after-school clubs, physical activity (PA) clubs, and Enrichment clubs); Participation in commercial-public OSA (attendance at art venues, visits to the cinema, spectatorship of professional sports and visits to theme-parks or funfairs); Participation in home-centred leisure activities (parent-child engagement in shared reading activities, shared creative activities and joint indoor play, as well as child's usage of electronic media).

The final set of independent variables used in the analyses presented in Chapter 5 includes children's scores on the age 5 verbal and non-verbal BAS2 sub-tests and the age 5 teacher's assessment. Prior academic outcomes, however, are a very different type of predictor compared to the independent variables described above. Their inclusion changes the interpretation of the model dramatically. As has been discussed earlier in Chapter 3, the inclusion of prior academic outcomes produces "developmental models" which make it possible to explore whether the academic skills of each group of children, namely those who participated in a particular out-of-school activity at a particular sweep and those who didn't, have improved, deteriorated or stayed constant in the middle childhood years.

The data in Chapter 5 are analysed using multiple linear regression models. The statistical models were created using a multi-stage modelling

approach. At the first step, a “null” model was fitted. At the second step, SES factors, family characteristics and academic measures were introduced. This step was followed by the addition of variables measuring participation in OSA, a step which made it possible to estimate the associations between children’s participation in various leisure activities and their academic performance at age 7 (i.e., "performance models"). The final step included the introduction of the cohort children's prior test scores to create "developmental models" which allowed calculation of children's "gain scores" (i.e., academic progress between ages 5 and 7). In these models, the age 7 academic outcomes reflect a combination of skills that have been developed by age 5, and a developmental progress in the following two years. Models in which the age 5 test scores are included are also more robust because, arguably, these scores embody earlier influences on children's academic development, such as the type of childcare children had experienced or their pre-school years’ home environment.

In addition to the steps described above, interaction models were fitted to examine whether, and to what extent, associations between participation in out-of-school clubs and children's gain scores vary by SES. The chapter discusses the two final stages of the modelling process as well as reporting the results of the interaction models.

5.3 Results

5.3.1 Is there a Gap in the Academic Performance of Children from Diverse SES Groups?

To unpack the questions to be addressed in Chapter 5, section 5.3.1 begins by considering whether there is a socio-economic gap in cohort members' academic performance at age 7. Table 5.1 displays the mean t-scores of the three academic outcomes of interest, given children's SES. The table shows, firstly, that the differences in the mean verbal scores of children with dissimilar SES are statistically significant: being in a higher SES category is associated with better verbal performance at age 7.

Table 5.1: Verbal, non-verbal, and teacher's assessment mean t-scores at age 7, by SES [a,b]

		Verbal scores			Non-verbal scores			Teacher's assessment		
		Mean	95% CI		Mean	95% CI		Mean	95% CI	
			Lower	Upper		Lower	Upper		Lower	Upper
Parental occupation	Not working	46.6	46.1	47.1	49.8	49.3	50.3	45.8	45.2	46.3
	Routine/manual	47.9	47.5	48.4	51.0	50.6	51.5	48.0	47.5	48.6
	Intermediate	50.4	50.0	50.8	53.4	52.9	53.8	50.6	50.1	51.1
	Managerial	53.3	53.1	53.5	55.9	55.6	56.2	53.6	53.3	53.9
Parental Education	No Qualifications	43.8	42.9	44.6	46.6	45.6	47.5	43.5	42.4	44.5
	Standard GCSE	46.2	45.5	47.0	48.6	47.8	49.4	45.4	44.4	46.3
	A levels	49.0	48.7	49.3	52.3	51.9	52.6	49.0	48.7	49.4
	University Degree	53.0	52.8	53.2	55.6	55.4	55.9	53.3	53.0	53.6
Household income	Bottom quartile	46.7	46.3	47.1	49.7	49.2	50.2	45.8	45.3	46.3
	2nd quartile	48.7	48.4	49.1	51.8	51.4	52.2	48.8	48.4	49.3
	3rd quartile	51.4	51.0	51.7	54.1	53.8	54.5	51.6	51.2	52.0
	Top quartile	53.8	53.5	54.0	56.5	56.1	56.8	54.3	53.9	54.6

a) Weighted; $N_{(verbal\ \&\ non\text{-}verbal\ tests)}$= 12,023-11,798, $N_{(teacher's\ assessment)}$= 8,014-7,865, b) Pearson chi-square test of association between each of the SES indicators and children's academic test scores is significant at 0.01 level.

For example, compared to children of parents who are not in paid work, the average verbal score of children who have at least one parent with a managerial or professional job is 6.7 points higher. Likewise, children who

are raised by a parent with a university degree achieved an average score 9.2 points higher than that of children with parents who have no formal educational qualifications.

The association between income and verbal performance presents a similar trend: children who live in the 25% highest income households scored 7.1 points higher on the verbal test than those brought up in the 25% lowest income homes.

The results for the non-verbal test and for the teacher's assessment are consistent with those obtained for the verbal test. At 7 years old, students present better non-verbal skills and are assessed as more academically skilled by their teacher if they belong to high-SES groups.

The next results, reported in Table 5.2, investigate these trends further. These results come from multilevel multiple regression models in which the "net" effect of each SES factor on children's academic outcomes is explored, while other predictors are held constant and the MCS stratified sample design is statistically controlled.

Model 1 of Table 5.2 displays the outcomes of a regression model estimating the effect of SES and other independent variables on children's verbal performance. The results of Model 1 indicate that children's verbal scores, at age 7, increase with parental occupational status, educational qualifications and level of income.

There is, in addition, a gender difference in verbal performance: boys achieved a lower score than girls. Furthermore, Model 1 shows that students in fee-paying schools and those who maintain regular school attendance scored higher on the verbal test than counterparts in non-fee paying schools and those who are frequently absent from school.

Table 5.2: Cohort members' academic performance at age 7, by SES and selected independent variables (*p<0.05, **p<0.01)

	Null Model: Verbal Test	**Model 1: Age 7 Verbal Performance**	Null Model: Non-Verbal Test	**Model 2: Age 7 Non-Verbal Performance**	Null Model: Teacher's Assessment	**Model 3: Age 7 Teacher's Assessment**
	Coeff'/S.E.	Coeff'/S.E.	Coeff'/S.E.	Coeff'/S.E.	Coeff'/S.E.	Coeff'/S.E.
Child, parents and household factors						
Parental occupation (NS-SEC)						
Ref: Routine/Manual						
Intermediate		1.241**		1.101**		0.972**
		(0.28)		(0.31)		(0.35)
Managerial		2.201**		1.950**		2.264**
		(0.28)		(0.32)		(0.35)
Not working		-0.334		-0.255		-0.751
		(0.31)		(0.36)		(0.41)
Mother's working hours		-0.018**		-0.014		-0.016
		(0.01)		(0.01)		(0.01)
Parental education (NVQ)						
Ref: No formal qualification						
GCSE or equivalent		1.719**		0.636		0.769
		(0.45)		(0.52)		(0.61)
A-levels or equivalent		3.343**		2.907**		2.869**
		(0.37)		(0.42)		(0.49)
University degree or equivalent		5.144**		4.117**		4.326**
		(0.39)		(0.45)		(0.52)
Household's income						
Ref: Bottom quartile						
2nd quartile		1.007**		0.828**		1.299**
		(0.28)		(0.31)		(0.36)
3rd quartile		1.962**		1.494**		2.505**
		(0.32)		(0.36)		(0.40)
Top quartile		3.004**		2.813**		3.921**
		(0.35)		(0.40)		(0.44)
Gender						
Ref: Girl						
Boy		-1.627**		-0.705**		-1.122**
		(0.17)		(0.19)		(0.21)
Family characteristics						
Parenting composition						
Ref: Co-parent household						
Single-mother household		0.102		0.266		0.133
		(0.25)		(0.28)		(0.31)
Adults in household						
Ref: No						
Yes		-0.288		-0.964*		-1.064*
		(0.34)		(0.39)		(0.44)
Children in household						
Ref: One child						
Two children		-0.106		0.593		0.655
		(0.27)		(0.31)		(0.34)
Three or more children		-0.974**		0.362		0.071
		(0.29)		(0.33)		(0.36)
School type and Absenteeism						
School fee applied?						
Ref: No						
Yes		3.147**		1.576**		1.811**
Absenteeism		(0.50)		(0.57)		(0.59)
Ref: Never						
Rarely		-0.986**		-0.354		-1.055**
		(0.20)		(0.23)		(0.26)
Frequently		-2.603**		-1.567**		-2.980**
		(0.22)		(0.25)		(0.28)
Constant	49.752**	45.349**	53.374**	48.291**	50.062**	44.914**
	(0.18)	(0.53)	(0.19)	(0.60)	(0.17)	(0.67)
N	**12,064**	**11,814**	**12,170**	**11,916**	**7,760**	**7,631**
Student Level Variance	92.72 (1.21)	82.78 (1.09)	112.75 (1.46)	107.26 (1.40)	94.71 (1.55)	84.03 (1.38)
Snijders/Bosker R^2 Student Level	-	0.278	-	0.300	-	0.320
Ward Level variance	7.87 (0.88)	4.81 (0.60)	8.18 (0.90)	4.47 (0.61)	5.03 (0.74)	1.95 (0.45)
Snijders/Bosker R^2 Ward Level	-	0.128	-	0.075	-	0.137
VPC (Variance Partition Coefficient)	0.078 (7.8%)	0.055 (5.5%)	0.068 (6.8%)	0.040 (4.0%)	0.050 (5.0%)	0.023 (2.3%)
-2LL	-44655.45	-43020.82	-46219.26	-44903.57	-28793.43	-27802.79

Finally, Model 1 demonstrates that most of the examined family characteristics are not associated with how well the cohort members performed verbally at age 7, once parental education, social class and income are accounted for. There is no significant variation in the verbal scores according to whether children are brought up in a single-mother household or not, or by the number of residents in the household, however having 3 or more siblings is associated with lower score on the age 7 verbal score.

Model 2, next, shows that 7-year-olds' non-verbal performance is positively linked to SES: the non-verbal scores are somewhat higher for students of better-educated parents, parents with high-status jobs and those living in higher-income households. Model 2 also shows that girls, students fee-paying school and those who maintained regular school attendance scored better on the age 7 non-verbal test. Neither the family composition nor the number of siblings sharing the cohort member's home is a statistically significant predictor of the child's non-verbal scores, once the other parental characteristics are taken into account. However, the presence of other adults in the household is associated with lower scores on the age 7 non-verbal test.

Lastly, Model 3 of Table 5.2 reports results from an exploration of the links between SES and the teacher's assessment. The model's estimations show that teachers' perceptions of children's abilities tend to be more positive for students who come from families where at least one of the parents is educated to degree level or holds a professional or managerial job, or if the child lives in a home with a high income. In addition, there is a gender difference: teachers assessed boys to be somewhat less academically

skilled than girls. Teachers in fee-paying schools compared to those in non-fee paying schools also gave their students better scores. Finally, Model 3 shows that teachers assessed students who regularly attended school as higher achievers than students who had missed school days.

Overall, the results shown in Tables 5.1-5.2 align with previous MCS research as well as with the broader literature on socio-economic stratification of academic outcomes. The tables indicate that students from higher-SES groups perform better verbally and non-verbally and that they are also assessed as more academically skilled than peers from lower-SES groups.

In addition, Table 5.2 reports that the patterns of attendance at school are linked to children's scores: students who maintain regular attendance perform better in the three different tests than those who show a pattern of absenteeism. Furthermore, at age 7, students in fee-paying schools and girls do better on the three outcomes of interest than students in non-fee paying school and boys.

The current section has therefore established that there is a gap in the academic performance of 7-year-olds from different SES groups. The subsequent sections of Chapter 5 concentrate on examining whether participation in a range of OSA has an independent (net) effect on children's academic outcomes, and if so, whether the effect of participation in such activities narrows, widens or simply maintains the academic performance gap among children with different SES.

5.3.2 Social-Group OSA and Academic Outcomes

Out-of-school clubs and children's verbal performance and development

Table 5.3 examines the associations between attendance at 3 different types of out-of-school clubs and children's verbal test scores.

First, Model 1 in Table 5.3 investigates the relationship between attendance at out-of-school clubs and children's verbal performance at age 7. This model is similar to Model 1 of Table 5.2, but with the addition of participation in out-of-school clubs as well as control variables which take into account children's participation in other out-of-school leisure activities.

As can be seen, a socio-economic disparity in 7-year-olds' verbal performance remains once participation in out-of-school clubs and other OSA is added, meaning that participation in such activities does not diminish the associations between SES and students' verbal test scores. The associations between students' verbal performance and gender, school type and absenteeism reported by Model 1 in Table 5.2 also remain after the introduction of participation in out-of-school clubs and a range of other forms of leisure OSA. In addition, the ward level variation in Model 1 of Table 5.3 is unchanged at approximately 5.5%, meaning that the introduction of participation in OSA has no effect on the (already small) geographical disparity in 7-year-olds' verbal performance.

Furthermore, the results of Model 1 show that there is a relationship between children's verbal performance at age 7 and participation in out-of-school clubs. However, the relationship differ by the type of club attended and the sweep in which the child attended these clubs.

Table 5.3: Associations between participation in ***out-of-school clubs*** and children's ***verbal*** performance and development (*p<0.05, **p<0.01)

	Model 1: Age 7 Verbal Performance Coeff'/S.E.	**Model 2: Developmental Model** Coeff'/S.E.
Child, parents and household factors		
Parental occupation (NS-SEC) (Ref: Routine/Manual)		
Intermediate	0.982** (0.28)	0.805** (0.27)
Managerial	1.799** (0.29)	1.325** (0.27)
Not working	-0.087 (0.32)	0.059 (0.31)
Mother's working hours	-0.019** (0.01)	-0.013 (0.01)
Parental education (NVQ) (Ref: No formal qualification)		
GCSE or equivalent	1.405** (0.47)	0.885 (0.46)
A-levels or equivalent	2.492 ** (0.39)	1.593** (0.38)
University degree or equivalent	3.920** (0.42)	2.765** (0.41)
Household's income (Ref: Bottom quartile)		
2nd quartile	0.664* (0.28)	0.517 (0.27)
3rd quartile	1.363** (0.33)	1.033** (0.31)
Top quartile	2.194** (0.37)	1.595** (0.35)
Gender (Ref: Girl)		
Boy	-1.594** (0.17)	-1.378** (0.17)
Family characteristics		
Parenting composition (Ref: Co-parent household)		
Single-mother household	-0.360 (0.26)	-0.578* (0.25)
Adults in household (Ref: No)		
Yes	-0.001 (0.35)	0.289 (0.34)
Children in household (Ref: One child)		
Two children	-0.103 (0.28)	0.108 (0.27)
Three or more children	-0.812** (0.30)	-0.313 (0.29)
School type and educational measures		
School fee applied? (Ref: No)		
Yes	2.827** (0.51)	2.585** (0.49)
Absenteeism (Ref: Never)		
Rarely	-0.965** (0.21)	-0.905** (0.20)
Frequently	-2.505** (0.23)	-2.383** (0.22)
Attendance at out-of-school clubs		
(Ref: Never)		
After school clubs - sweep 3	-0.070 (0.40)	0.049 (0.39)
After school clubs - sweep 4	-0.201 (0.25)	-0.157 (0.24)
After school clubs - both sweeps	-1.070** (0.37)	-1.036** (0.36)
(Ref: Never)		
Sport clubs - sweep 3	0.076 (0.36)	-0.379 (0.34)
Sport clubs - sweep 4	1.298** (0.26)	0.940** (0.25)
Sport clubs - both sweeps	1.269** (0.26)	0.736** (0.25)
(Ref: Never)		
Enrichment clubs - sweep 4	0.846** (0.19)	0.678** (0.18)
Participation in other out-of-school activities		
Commercial-leisure activities index	0.543** (0.05)	0.340** (0.05)
Home-centred leisure activities index	-0.066** (0.01)	-0.074** (0.01)
Child's verbal score at age 5		0.259** (0.01)
Constant	45.62** (0.73)	34.37** (0.80)
N	**11,114**	**11,019**
Student Level Variance	79.63 (1.08)	72.89 (1.00)
Snijders/Bosker R^2 Student Level	0.288	0.200
Ward Level variance	4.93 (0.61)	6.32 (0.70)
Snijders/Bosker R^2 Ward Level	0.147	0.197
VPC (Variance Partition Coefficient)	0.058 (5.8%)	0.78 (7.8%)
-2LL	-40266.89	-39472.63

As can be seen, attendance at after school clubs consecutively at age 5 and 7, but not at each of the sweeps separately, is associated with a slightly lower performance on the age 7 verbal test. In contrast, participation in PA clubs at sweep 4 and at both sweeps, but not at sweep 3 alone, is associated with higher scores on the age 7 verbal test. Likewise, attendance at enrichment clubs at sweep 4 is positively associated with the age 7 verbal test scores.

Next, Model 2 in Table 5.3 explores the relationship between attendance at out-of-school clubs and children's verbal progress in the middle childhood years. The Model demonstrates a relationship between children's verbal development and participation in out-of-school clubs. As can be seen, the cohort members' verbal gain-scores are negatively associated with attendance at after-school clubs (at both sweep). This finding implies that, between age 5 and 7 the verbal skills of children who attended after-school clubs consecutively at sweep 3 and 4 developed less than the verbal skills of children who never attended after-school clubs. However, this pattern of "negative growth" does not necessarily mean that the verbal skills of students who attended after-school clubs have not developed at all within this time frame, or that participation in such clubs is not beneficial for children's verbal development. Instead, this negative pattern indicates that those who never attended after-school clubs between age 5 and 7 progressed more in terms of their performance on the verbal test than counterparts who attended these clubs.

Conversely to the negative association reported above, the developmental model in Table 5.3 shows that participation in PA clubs and enrichment clubs is linked to verbal progress: between age 5 and 7, the

average verbal test score of children who attended PA clubs (at both sweeps) improved by about 0.74 points more than the verbal score of counterparts who never attended PA clubs. Similarly, attendance at enrichment clubs is associated with an increase of approximately 0.68 points in the verbal score of students.

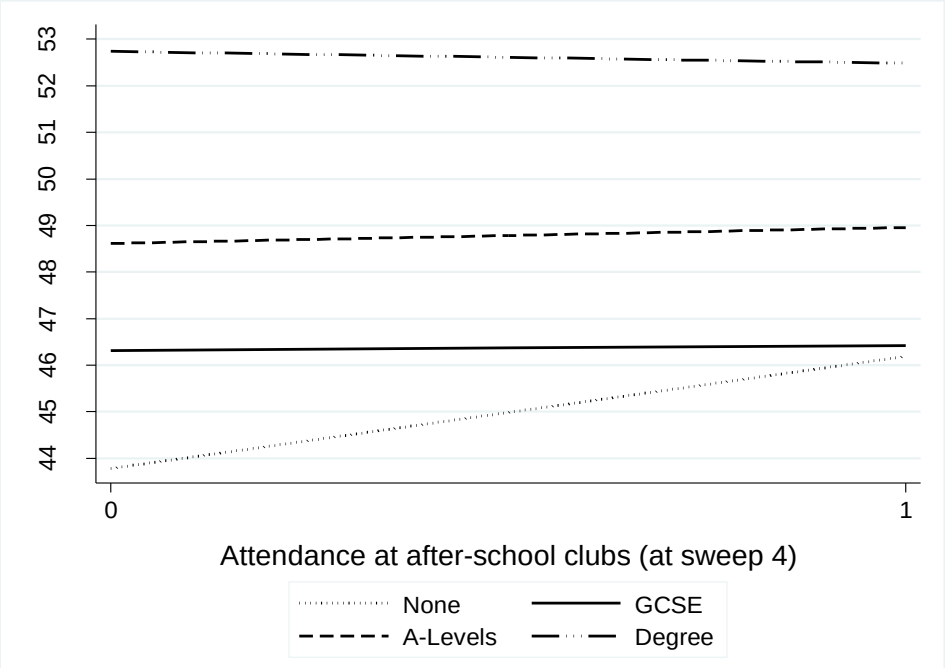
The associations between attendance at the three types of out-of-school clubs and children's verbal gain-scores were explored further by the introduction of interaction terms to the developmental model. These interaction terms were fitted to examine whether the association between children's verbal gains and attendance at out-of-school clubs, differ by parental occupation status, education level and the family's income. Results from these interaction models provide some indication that the verbal gains from attendance at after-school clubs and PA clubs, but not at enrichment clubs, vary by children's SES.

Figures 5.1-5.2 display the predicted change in verbal score by attendance at after-school clubs and SES (a complete set of estimations from the Model is given by Table 7A in appendix 7). The Figures indicate that the associations between students' verbal gain-scores and attendance at after-school clubs vary across the levels of parental education and familial incomes.

Figure 5.1, first, shows that children in families in which at least one of the parents is educated to a university degree level outperformed children of less well educated parents on the verbal test. The estimated average verbal score of this group is roughly 53 points, a score higher by 3 points from the sample's average. Still focusing on children of highly educated parents, however, the Figure also shows that, regardless of whether or not these

children attended after-school clubs, their average verbal score remained stable, with no verbal gains from attendance at such clubs. A similar trend is displayed for children of parents with more basic education: irrespective of attendance at after school clubs, the estimated average verbal score of children with at least one parent who hold A-Levels or GCSE, is about 49 points and 46.5 points, respectively.

Figure 5.1: Interaction between parental education and attendance at after-school clubs on the verbal gain-scores (N=11,019)



*Predicted values from Table 7A in appendix 7 (p.435) Other IVs set at mean.

In contrast, Figure 5.1 shows that attendance at after-school clubs (at sweep 4) is linked to an increase of about 2 points in the predicted verbal score of children in families where the parents hold no formal educational qualifications. Among children of parents with no formal education, the estimated verbal score of children who never attended after-school clubs is

about 44 points, compared to roughly 46 points for those who attended such clubs. As can be seen, the average verbal score of children with parents who hold no formal educational qualifications who attended after-school clubs becomes equal to that score of peers with parents who obtained GCSEs. Moreover, participation in after-school clubs is associated with a reduction of 2 points in the verbal score gap between the highest achieving group and the lowest achieving group.

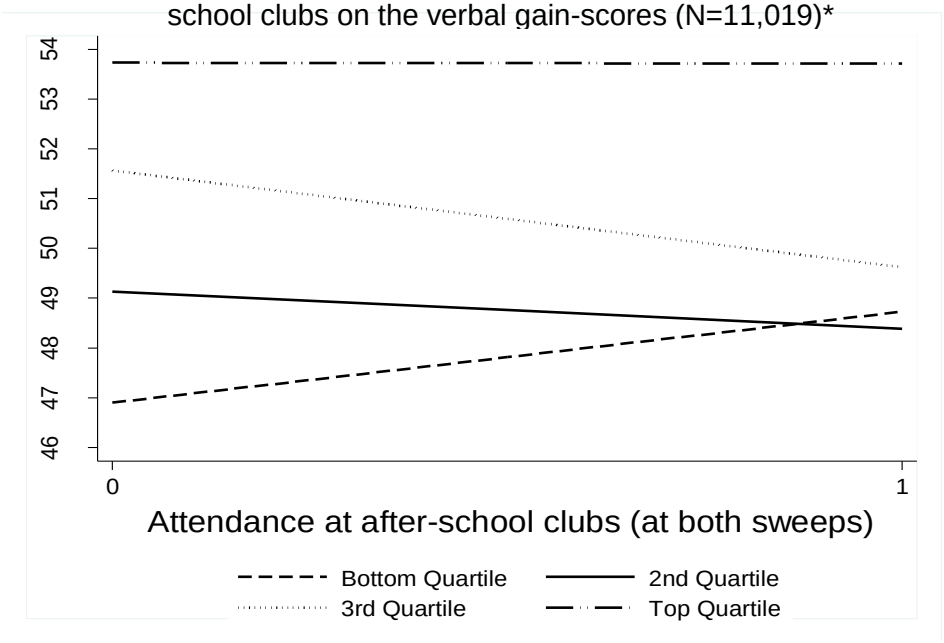
This interaction between parental education levels and attendance at after-school clubs suggests that, in terms of verbal development in the middle childhood years, children of parents with no formal education benefit from attending after-school clubs, whereas participation in such clubs has no similar benefit for the verbal progress of children who grow up in homes where at least one of the parents obtained formal educational qualifications.

The predicted improvements in children's verbal test scores by family incomes and attendance at after-school clubs are depicted in Figure 5.2. As can be seen, the differential "after-school clubs" effect is visible here again: attendance at such clubs, at both sweeps, is associated with a gain of about 2 points in the verbal score of children in the bottom income quartile, with a decrease in the verbal score of counterparts in the 2nd and 3rd income quartiles and with no change in the verbal scores of peers in the top income quartile.

In keeping with results for parental education shown in Figure 5.1, the interaction between participation in after-school clubs and income demonstrates a reduction in the verbal achievement gap among children at the extreme ends of the income distribution. It is worth noticing that, according to Figure 5.2, for children in families that "fall" into the mid-

income range, attendance at after-school clubs is associated with a "loss" of points on the verbal test. This is an interesting finding which may indicate that after-school clubs serving children from either families with very high incomes or very low incomes benefit from more resources and manpower than those providing care for children in families with intermediate income levels.

Figure 5.2: Interaction between income and attendance at after-school clubs on the verbal gain-scores (N=11,019)*



*Predicted values from Table 7A in appendix 7 (p. 435). Other IVs set at mean.

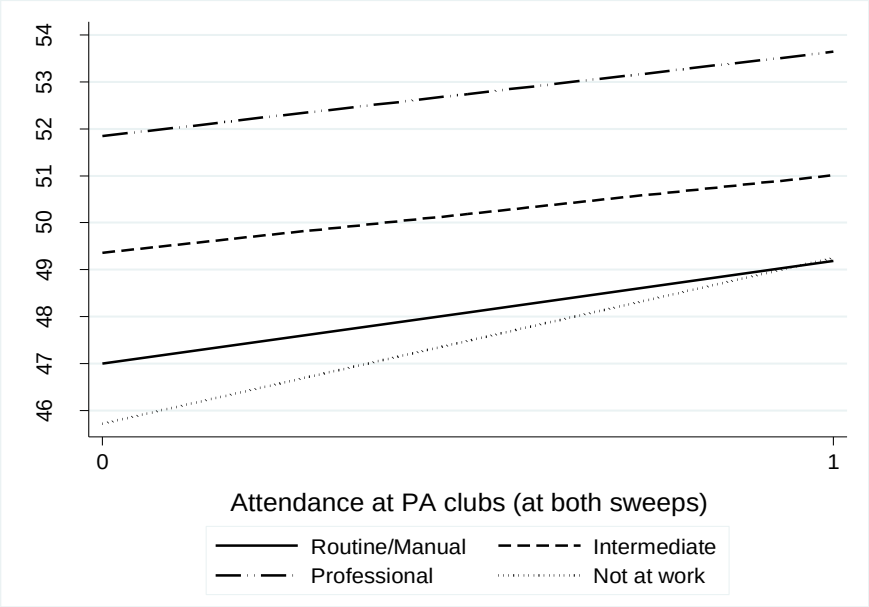
Taken together, the findings presented in Figures 5.1 and 5.2 indicate that children of very highly-educated parents, or those who live in households that "fall" into the top income quartile, remain the highest achievers, with average scores of about 53-54 points on the verbal test, even when the effect of participation in after-school clubs is considered. Nevertheless, the results suggest that attendance at after-school clubs

advantages the verbal development of children who live in homes within the 25% lowest income range or families with two parents with no formal educational qualifications, relative to the progress of counterparts in higher income homes or those living with better educated parents. Therefore, attendance at after-school clubs slightly narrows the socio-economic gap in children's verbal skills by contributing to the verbal development of children from very low SES groups, but not to the verbal progress of peers from intermediate and high SES groups.

Figures 5.3 and 5.4, next, report the predicted progress in children's verbal scores, by attendance at PA clubs and parental occupation and incomes (a complete set of estimations from the Model is given by Table 7B in appendix 7, p.436).

As can be seen from Figure 5.3, the predicted verbal score of children of parents with managerial/professional jobs is about 52 for those who never attended PA clubs and roughly 53.5 for those who attended PA clubs (at both sweeps). Similarly, the estimated verbal score of children of parents with intermediate occupations is about 49.5 for children who never attended PA clubs in the middle childhood years, increasing to roughly 51.0 for peers who attended such clubs. The predicted verbal score of children with parents with routine/manual jobs is about 47.0 for those who never attended PA clubs, rising to just over 49.0 for counterparts who attended these clubs. The estimated verbal score of children with two parents who are not in work is just below 46.0 points for those who never attended PA clubs, increasing to just over 49.0 points if the child attended such clubs.

Figure 5.3: Interaction between parental occupation and attendance at PA clubs on the verbal gain-scores (N=11,019)*



*Predicted values from Table 7B in appendix 7 (p.436). Other IVs set at mean.

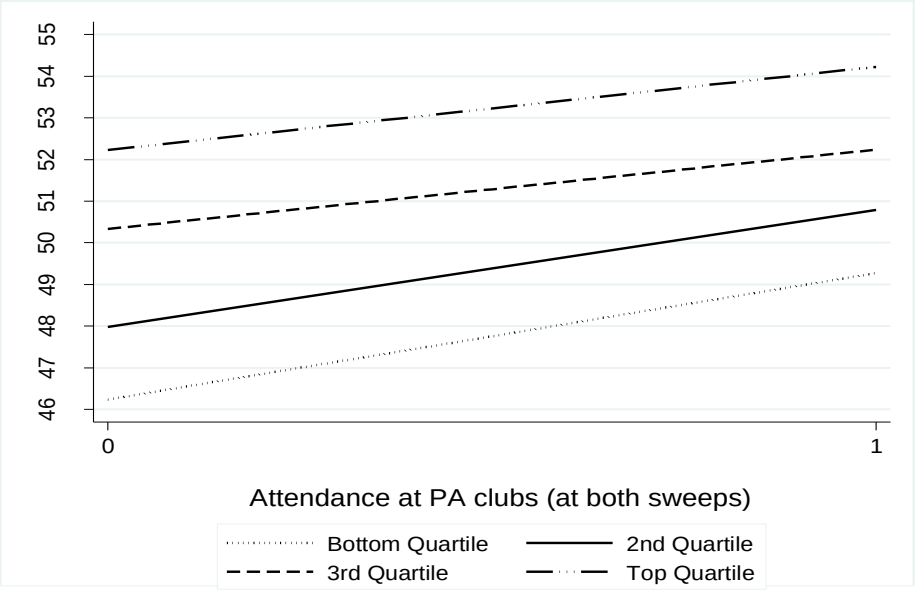
So, attendance at PA clubs is associated with verbal progress for all children. However, the improvement is greater for children of non-working parents relative to children of working parents. In addition, among children of employed parents, the verbal score gain is somewhat higher among children of parents with routine/manual jobs compared to peers growing up with parents who hold higher-status jobs. This finding implies that participation in PA clubs in the middle childhood years may slightly attenuate the gap in verbal development of children living with parents with different levels of occupational status.

Lastly, Figure 5.4 illustrates the effect of the interaction between attendance at PA clubs and incomes on children's verbal gain-scores.

The trend shown by this Figure is markedly similar to the one displayed in Figure 5.3: attendance at PA clubs appears to be associated with gains in the average verbal score of all children. However, participation in such clubs is associated with a slightly greater improvement in the average verbal score of children living in households that "fall" into the lower 50% income range than for children in higher income families.

Taken together, the findings presented by Figures 5.1-5.4 imply that attendance at PA clubs in the middle childhood years could slightly lessen the gap in the verbal skills development of children from families with working and non-working parents, as well as between children from low-income and high-income households. Nevertheless, considerable differences in the verbal development of children in different strata remain even once the attenuation effect of participation in PA clubs is taken into consideration.

Figure 5.4: Interaction between income and attendance at PA clubs on the verbal gain-scores (N=11,019)*



*Predicted values from Table 7B in appendix 7 (p. 436). Other IVs set at

The relationship between attendance at out-of-school clubs and the verbal performance and development of children from different SES groups can now be summarised. As has been demonstrated in Model 1 of Table 5.2, at age 7, children's verbal test scores rise considerably with their SES. Although it slightly declines, this SES advantage remains significant once the effects of participation in out-of-school clubs are taken into consideration (Model 1 of Table 5.3). Furthermore, between ages 5 and 7, children who live with better educated parents, with parents who hold high-status jobs, and in households with high incomes, demonstrate greater verbal improvement than peers in lower SES groups (Model 2 in Table 5.3). The interaction models show that children's verbal progress is linked to participation in out-of-school clubs, but the verbal gains differ by SES and the type of club attended. Attendance at enrichment clubs is associated with similar verbal score gains for children in all SES groups, while participation in after-school clubs is linked to verbal improvement only for children in very low SES groups. Attendance at PA clubs is linked to progress on the verbal test for all children; however, for children in low SES groups, participation in such clubs is associated with greater improvement relative to counterparts in higher SES groups. Thus, the overall findings imply that participation in after-school and PA clubs, but not in enrichment clubs, may lessen the gap in the verbal outcomes of students from dissimilar SES groups.

These findings, however, should be considered in relation to results reported earlier in section 4.3.1, according to which 7-year-olds from lower-SES groups are less likely to attend out-of-school clubs than same-age peers

who are more socio-economically advantaged. The gap is particularly large considering the differing attendance rates at PA and enrichment clubs, in which children from high SES groups are considerably overrepresented compared to their lower SES peers. So, while children from very low SES groups may gain more than children in intermediate or high SES groups by attending after-school and PA clubs, the former are less likely than the latter to be enrolled in these clubs. Thus, promoting the participation rates of children from very low SES groups in after-school and PA clubs may enhance this group's verbal performance and help in narrowing the achievement gap across social strata.

Next, the relationship between attendance at out-of-school clubs and children's non-verbal performance and development is examined.

Out-of-school clubs and children's non-verbal performance and development

Table 5.4 examines the associations between attendance at out-of-school clubs and children's non-verbal performance and development. The first model of Table 5.4 displays results from an analysis examining the relationship between attendance at out-of-school clubs and children's non-verbal performance at age 7.

Table 5.4: Associations between participation in ***out-of-school clubs*** and children's ***non-verbal*** performance and development (*p<0.05, **p<0.01)

	Model 1: Age 7 Non-Verbal Performance Coeff'/S.E.	**Model 2: Developmental Model** Coeff'/S.E.
Child, parents and household factors		
Parental occupation (NS-SEC) (Ref: Routine/Manual)		
Intermediate	0.855** (0.32)	0.734** (0.27)
Managerial	1.547** (0.32)	1.204** (0.28)
Not working	0.080 (0.37)	0.360 (0.32)
Mother's working hours	-0.014 (0.01)	-0.006 (0.01)
Parental education (NVQ) (Ref: No formal qualification)		
GCSE or equivalent	0.272 (0.54)	-0.167 (0.47)
A-levels or equivalent	1.989** (0.45)	0.504 (0.38)
University degree or equivalent	2.769** (0.48)	0.987* (0.41)
Household's income (Ref: Bottom quartile)		
2nd quartile	0.632 (0.32)	0.419 (0.28)
3rd quartile	0.898* (0.37)	0.635* (0.37)
Top quartile	1.908** (0.41)	1.162** (0.36)
Gender (Ref: Girl)		
Boy	-0.755** (0.20)	0.230 (0.17)
Family characteristics		
Parenting composition (Ref: Co-parent household)		
Single-mother household	-0.022 (0.30)	-0.108 (0.25)
Adults in household (Ref: No)		
Yes	-0.604 (0.40)	0.034 (0.34)
Children in household (Ref: Only child)		
Two children	0.524 (0.32)	0.350 (0.27)
Three or more children	0.477 (0.34)	0.486 (0.29)
School type and Absenteeism		
School fee applied? (Ref: No)		
Yes	1.328* (0.58)	1.131* (0.50)
Absenteeism (Ref: Never)		
Rarely	-0.342 (0.23)	-0.043 (0.20)
Frequently	-1.471** (0.26)	-0.769** (0.22)
Attendance at out-of-school clubs		
Ref: Never		
After school clubs - sweep 3	0.332 (0.46)	0.184 (0.39)
After school clubs - sweep 4	-0.507 (0.28)	-0.455 (0.24)
After school clubs - both sweeps	-0.116 (0.42)	0.071 (0.36)
Ref: Never		
Sport clubs - sweep 3	0.358 (0.41)	0.264 (0.35)
Sport clubs - sweep 4	0.312 (0.30)	-0.171 (0.26)
Sport clubs - both sweeps	0.888** (0.30)	0.565* (0.26)
Ref: Never		
Enrichment clubs - sweep 4	0.805** (0.21)	0.564** (0.18)
Participation in other out-of-school activities		
Commercial-leisure activities index	0.548** (0.06)	0.302** (0.05)
Home-centred leisure activities index	-0.025* (0.01)	-0.014 (0.01)
Child's non-verbal score at age 5		0.570** (0.01)
Constant	47.045** (0.82)	20.790** (0.82)
N	**11,210**	**11,099**
Student Level Variance	104.51 (1.41)	76.41 (1.04)
Snijders/Bosker R^2 Student Level	0.309	0.534
Ward Level variance	4.21 (0.60)	2.58 (0.40)
Snijders/Bosker R^2 Ward Level	0.087	0.330
VPC (Variance Partition Coefficient)	0.039 (3.9%)	0.033 (3.3%)
-2LL	-42097.71	-39928.46

From a comparison of this model with Model 2 of Table 5.2 it can be seen, firstly, that after the inclusion of participation in out-of-school clubs and a range of other OSA, parental occupation and educational levels and the family's income remain significant predictors of children's non-verbal test scores. Likewise, the associations between non-verbal performance at age 7 and gender, school types and absenteeism hold up.

With reference to out-of-school clubs, the model shows that, once SES and other background characteristics are statistically controlled, attendance at after-school clubs is not associated with the age 7 non-verbal scores. In contrast, there are positive associations between non-verbal performance and participation in PA and enrichment clubs. Specifically, children who attended PA clubs (at both sweeps) scored about 0.9 points higher on average than counterparts who did not attend such clubs between ages 5 and 7. Similarly, cohort members who attended enrichment clubs (at sweep 4) scored about 0.8 points higher than peers who did not attend similar clubs. So, attendance at PA and enrichment clubs appears to be associated with better performance on the age 7 non-verbal test. In contrast, attendance at after-school clubs does not seem to be linked to the non-verbal test scores of 7-year-olds.

Model 2 in Table 5.4 is a developmental model estimating the associations between participation in out-of-school clubs and children's non-verbal gain-scores. The developmental model indicates, firstly, that there are positive associations between SES and children's non-verbal gain-scores, meaning that between ages 5 and 7, cohort members from high SES groups experienced greater improvement on the non-verbal test than peers in the lower SES groups. Likewise, studying in a fee-paying school is associated

with greater non-verbal progress relative to studying in a non-fee-paying school. Conversely, having a record of frequent absences is linked to a decline in the non-verbal score between ages 5 to 7. Interestingly, while the non-verbal performance model indicates that, at age 7, girls achieve higher scores than boys, the developmental model shows that there is no significant variation in the non-verbal gain-scores of boys and girls: the inclusion of prior test scores cancels out the association between gender and non-verbal skills development. It could be that girls outperform boys on the age 7 test because they have developed better non-verbal skills in the pre-school years, and gained earlier advantage which is crystallised on the age 5 test results.

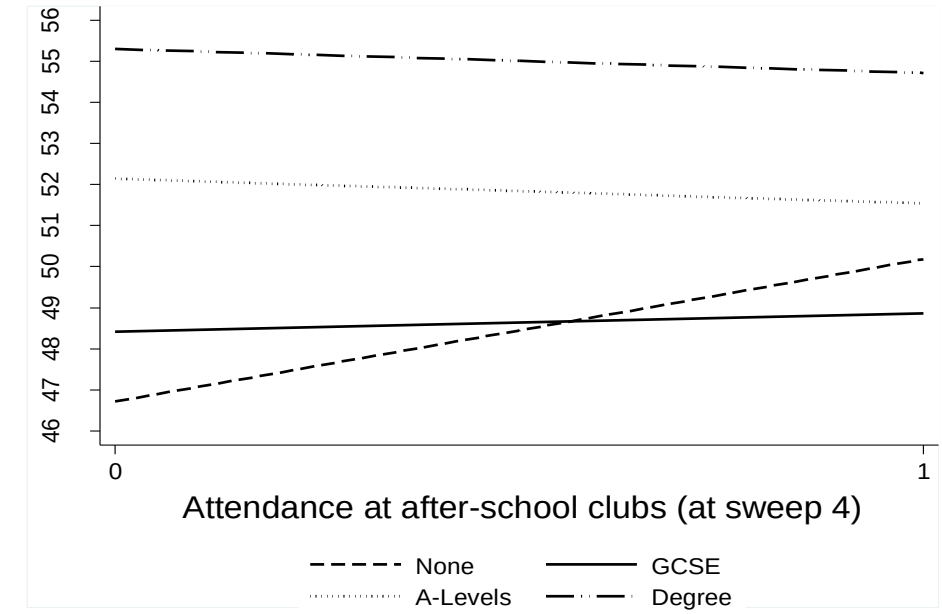
In addition to the above, Model 2 in Table 5.4 shows that, among the three types of out-of-school clubs under discussion, attendance at PA and enrichment clubs, but not at after-school clubs, is linked to improvement on the non-verbal test. After controlling for SES, family characteristics, school type, absenteeism and participation in a wide range of out-of-school leisure activities, attendance at the two former club types, consistently at both sweeps, is linked to an increase of about half a point in the average non-verbal test score. Conversely, participation in after-school clubs seems not to be associated with progress on the non-verbal test between ages 5 and 7.

To further unpack the connection between attendance at out-of-school clubs and the non-verbal development of children from different SES groups, interaction terms were introduced to the developmental model. No statistically significant interactions were found between SES and attendance at PA and enrichment clubs. This finding implies that, in the middle childhood years, the positive relationship between participation in enrichment clubs, as well as in PA clubs, and children's non-verbal

development is similar in magnitude for children in different SES levels. By attending these clubs, students in low, intermediate and high SES groups appear to experience comparable gains in their non-verbal test scores.

The interaction models, however, provide some indication of a variation across the levels of SES in the associations between non-verbal development and participation in after-school clubs. Figure 5.5 displays the predicted improvements in children's non-verbal test scores by parents' education and attendance at after-school clubs (a complete set of estimations from the Model is given by Table 7C in appendix 7, p.437).

Figure 5.5: Interaction between parental education and attendance at after-school clubs on the non-verbal gain-scores (N=11,099)*



* Predicted values from Table 7C in Appendix 7 (p. 437). Other IVs set at mean.

As can be seen, attendance at after-school clubs is not linked to improvements in the non-verbal test scores of children living with parents

who obtained formal educational qualifications at a secondary school level or higher. In contrast, for children living with parents who hold no formal educational qualifications, attendance at after-school clubs is linked to a significant increase in the non-verbal test scores. This finding suggests that, in terms of non-verbal score gains in middle childhood, after-school clubs advantages children of non-educated parents relative to children of parents with formal education.

But, while participation in after-school clubs appears to help children of non-educated parents to "catch up" with the non-verbal scores of children of parents who are educated to a secondary school level, they are all outperformed by children of parents with a university degree.

Overall, the results continue to suggest that participation in after-school clubs may slightly reduce the socioeconomic gap in children's academic outcomes. Attendance at after-school clubs seems to be particularly linked to the academic progress of children from very low SES groups, compared to counterparts with intermediate and high SES characteristics. In contrast, participation in enrichment clubs is associated with comparable academic development for children across all SES levels. Participation in PA clubs is related to greater verbal score gains for children in the low SES stratum relative to peers from higher strata, but also to non-verbal score gains which are similar in magnitude for children across the SES levels.

Thus far, the analyses in section 5.3.2 have concentrated on exploring the links between attendance at out-of-school clubs, SES and the cohort members' academic outcomes, as demonstrated by their scores on verbal and non-verbal standardised tests. In the next set of analyses, this section examines a different outcome type – the teachers' assessments.

Out-of-school clubs, SES and the teachers' assessments

Table 5.5 examines the associations between attendance at out-of-school clubs and the teacher's assessment. The assessment score sums up the rating of the cohort member's skills, as seen by his or her class teacher, in reading, writing, science, maths, and ICT.

The first model in Table 5.5 presents results from an analysis estimating the associations between participation in out-of-school clubs and the age 7 teacher's assessment. As with the two performance models previously discussed (Tables 5.3-5.4), this model, too, indicates that attendance at out-of-school clubs and a variety of other leisure OSA does not reduce the association between children's SES and their academic performance to a statistically insignificant level. This means that, regardless of whether or not children are enrolled in such clubs, those who grow up in higher-SES families are perceived by their teachers to be more academically skilled than peers who live in lower-SES homes. The associations between the teacher's assessment and the school type in which his/her student is educated, absenteeism pattern and gender also hold in the performance model. As can be seen, girls, children in fee-paying schools and students who maintain regular school attendance scored higher on the age 7 teacher's assessment than boys, children in non-fee-paying schools and students who frequently miss school days.

Model 2 in Table 5.5 displays the results of a developmental model examining the associations between children's participation in out-of-school clubs and the teachers' assessments. In this Model, the teacher's assessment at age 5 is taken into account.

As can be seen from the reduction in the size of the coefficients in the developmental model, the relationship between SES and the assessment scores declines once the age 5 results are taken into account, but does not diminish completely.

This moderation effect implies that the students' performance on the teachers' assessment at age 5 explains some of the association between SES and the age 7 scores. In keeping with the developmental models of Tables 5.3 and 5.4, according to which SES is positively associated with academic gains on the verbal and non-verbal standardised tests, teachers perceived the academic progress of children who grow up in higher SES families to be greater than the academic progress of peers from lower SES families.

In contrast, there is no indication of a link between the type of school children attend and their academic progress, as reported by their class teachers. According to the teachers' reports, between ages 5 and 7, the academic gains of students in fee-paying and non-fee-paying schools are similar. So, while the developmental models reported by Tables 5.3 and 5.4 demonstrate greater verbal and non-verbal score gains for children in fee-paying schools in the middle childhood years, this is not reflected in the teachers' assessments.

Table 5.5: Associations between participation in ***out-of-school clubs*** and the ***teachers' assessments*** (*p<0.05, **p<0.01)

	Model 1: Age 7 Performance Coeff'/S.E.	**Model 2: Developmental Model** Coeff'/S.E.
Child, parents and household factors		
Parental occupation (NS-SEC) (Ref: Routine/Manual)		
Intermediate	0.648 (0.35)	0.295 (0.32)
Managerial	1.826** (0.36)	1.321** (0.32)
Not working	-0.429 (0.42)	-0.116 (0.38)
Mother's working hours	-0.015 (0.01)	-0.006 (0.01)
Parental education (NVQ) (Ref: No formal qualification)		
GCSE or equivalent	0.303 (0.63)	-0.058 (0.57)
A-levels or equivalent	1.744** (0.52)	0.244 (0.47)
University degree or equivalent	2.687** (0.55)	1.087* (0.50)
Household's income (Ref: Bottom quartile)		
2nd quartile	0.879* (0.37)	0.100 (0.34)
3rd quartile	1.657** (0.41)	0.622 (0.38)
Top quartile	2.689** (0.46)	1.149** (0.41)
Gender (Ref: Girl)		
Boy	-1.097** (0.22)	0.521** (0.20)
Family characteristics		
Parenting composition (Ref: Co-parent household)		
Single-mother household	-0.435 (0.33)	-0.125 (0.30)
Adults in household (Ref: No)		
Yes	-0.831 (0.45)	-0.697 (0.41)
Children in household (Ref: One child)		
Two children	0.471 (0.34)	0.167 (0.31)
Three or more children	0.067 (0.37)	0.114 (0.33)
School type and educational measures		
School fee applied? (Ref: No)		
Yes	1.374* (0.60)	-0.656 (0.77)
Absenteeism (Ref: Never)		
Rarely	-1.143** (0.26)	-0.584* (0.23)
Frequently	-2.798** (0.28)	-1.634** (0.25)
Attendance at out-of-school clubs		
Ref: Never		
After school clubs - sweep 3	0.005 (0.49)	-0.637 (0.45)
After school clubs - sweep 4	-0.004 (0.31)	-0.024 (0.27)
After school clubs - both sweeps	-0.270 (0.44)	-0.685 (0.41)
Ref: Never		
Sport clubs - sweep 3	0.419 (0.45)	-0.283 (0.41)
Sport clubs - sweep 4	1.122** (0.33)	0.336 (0.30)
Sport clubs - both sweeps	1.979** (0.33)	0.437 (0.30)
Ref: Never		
Enrichment clubs - sweep 4	0.850** (0.23)	0.502* (0.21)
Participation in other out-of-school activities		
Commercial-public leisure index	0.543** (0.06)	0.119* (0.06)
Home-centred leisure index	-0.053** (0.01)	-0.034** (0.01)
Child's assessment at age 5		0.579** (0.01)
Constant	44.86** (0.92)	19.93** (0.97)
N	**7,235**	**6,041**
Student Level Variance	81.14 (1.38)	54.96 (1.03)
Snijders/Bosker R^2 Student Level	0.292	0.370
Ward Level variance	2.43 (0.51)	2.99 (0.50)
Snijders/Bosker R^2 Ward Level	0.156	0.405
VPC (Variance Partition Coefficient)	0.030 (3.0%)	0.051 (5.1%)
-2LL	-26248.43	-20778.77

In addition, the trend for gender reverses once the age 5 assessment results are taken into account: although girls outperformed boys on the age 7 assessment, on average, boys achieved higher gain-scores than girls. This finding implies that between age 5 and 7, the academic progress of children, as assessed by their teachers, is greater for boys than for girls.

The developmental model in Table 5.5 shows, furthermore, that attendance at enrichment clubs, but not at after-school or PA clubs, is linked to progress on the teacher's assessment between ages 5 and 7. Interestingly, the association between participation in PA clubs and the age 7 assessment score cancels out when the age 5 results are added. This could mean that the positive link between participation in PA clubs and the age 7 assessment scores, reported by the performance model, is fully mediated by children's prior assessment results. It could be that the connection between participation in PA clubs and the cohort members' performance at age 7 reflects skills that were developed before they reached their 5th birthday. For example, it may be that children who go to PA clubs in the middle childhood years also have a history of frequent participation in a range of organised sports in the pre-school years, and this could potentially have enduring developmental benefits which are captured by the age 7 assessment. Alternatively, a change in the pattern of parental involvement in school between the two MCS sweeps could have led to a change in the child's academic skills development, as assessed by the teacher, and this parental involvement may also be associated with the decision of the parents to enrol their child in PA clubs.

Nevertheless, the developmental Model shows that children who attended enrichment clubs achieved a gain-score higher by about half a point

than children who did not attend such clubs. This result is similar to the trends shown earlier in the developmental models of Table 5.3-5.4, which explored the association between participation in enrichment clubs and children's verbal and non-verbal progress in the middle childhood years.

No significant effects were found in interaction models that were fitted to examine whether the relationship between participation in out-of-school clubs and children's academic development, as perceived by their teachers, varies across the different levels of SES. On the one hand, these results are consistent with previous findings reported in this study for enrichment clubs, showing that the progress in children's scores is similar across the different levels of SES. On the other hand, the absence of interactions between SES and after-school clubs, in relation to children's gains on the teacher's assessment, is inconsistent with results reported earlier for the verbal and non-verbal developmental models. Overall, the results of the analyses displayed in Table 5.5 and associated interaction models lend no support to the possibility that attendance at out-of-school clubs narrows the SES gap in the teachers' assessments in the middle childhood years.

5.3.3 Summary: Social-group OSA and Academic Outcomes

The analyses in section 5.3.2 have demonstrated associations between participation in social-group OSA, measured in this thesis by attendance at various out-of-school clubs and organised adult-led group activities, and academic performance among British 7-year-olds. Furthermore, the analyses showed some relationships between participation in social-group OSA and children's academic development between age 5

and 7. A schematic summary of the findings from section 5.3.2 is given in Table 5.5A.

Table 5.5A: Associations between participation in social-group OSA and academic outcomes, by socio-economic strata - summary

		Verbal Scores		Non-verbal Scores		Teacher's assessment	
		Age 7	Devel'	Age 7	Devel'	Age 7	Devel'
After-school clubs	Higher/ Intermediate Strata	-	-/n.s.	n.s.	n.s.	n.s.	n.s.
	Lower Strata		+		+		n.s.
PA clubs/ classes	Higher/ Intermediate Strata	+	+/n.s.	+	+	+	n.s.
	Lower Strata		++		+		n.s.
Enrichment clubs/classes	Higher/ Intermediate Strata	+	+	+	+	+	+
	Lower Strata		+		+		+

As has been shown by the "performance" models in Tables 5.3, 5.4 and 5.5, after accounting for SES, family factors, geographical effects, school-related measures and participation in a range of out-of-school leisure activities, children's attendance at out-of-school clubs and adult-led group activities helps in estimating their academic performance at age 7.

The results from the "academic performance" models also show that participation in social-group OSA does not cancel out the socio-economic gap in children's academic performance: 7-year-olds' test scores incrementally increase with parental education level, parental occupational status and the family's income, even when participation in such leisure settings is taken into account.

The developmental models in section 5.3.2 showed that the SES achievement gap remains statistically significant once the cohort members' age 5 test scores are taken into account. This finding implies that the academic skills of children in higher SES groups develop more between age 5 and 7, when compared with peers in lower SES families. The greater score

gains of children in higher strata are evident in the three academic outcomes under discussion, namely, the verbal and non-verbal standardised tests, and the teachers' assessments.

Furthermore, the developmental models in section 5.3.2 show that not only do the associations between participation in social-group OSA and children's academic progress vary by the type of activity attended and the outcomes of interest, in some cases there are interactions between participation and SES.

Attendance at after-school clubs, firstly, is associated with an improvement only on the two standardised outcomes, and this improvement is either significant only for children in very low SES groups, or larger for the low SES children compared to counterparts in intermediate or high SES groups. These findings propose that participation in after-school clubs may slightly narrow the socio-economic gap in academic skills development in the middle childhood years, at least in relation to progress on the examined standardised tests.

Attendance at PA clubs is also linked to gains on the verbal and non-verbal standardised tests but not on the teacher's assessment. In addition, the academic improvement associated with participation in PA clubs is either larger for children in low SES groups than for peers living in families with higher SES (verbal test), or similar for children irrespective of their SES (non-verbal test). The implications of the links between attendance at PA clubs and academic progress for the SES achievement gap in the middle childhood years are therefore complex. On the one hand, it can be argued that attendance at PA clubs may help in reducing the socio-economic achievement gap, as it is associated with greater verbal score gains in

children from low SES groups. However, as has been demonstrated earlier (section 4.3.1), children who live in higher-SES homes are more likely to attend PA clubs than children who grow up in lower-SES families. That means that greater numbers of those who are socio-economically advantaged are in a position to experience the positive academic returns associated with participation in PA clubs. As a group, this can result in the reproduction of better academic outcomes for children in higher strata.

Finally, attendance at enrichment clubs is associated with improvement on all three academic outcomes, with no particular SES group showing greater progress than the others. This could mean that attendance at enrichment clubs is a domain in which socio-economic inequality in academic outcomes is reproduced. This is because although participation in such clubs is linked to higher academic outcomes for all children, those who are in higher-SES groups are more likely to participate in these clubs.

5.3.4 Commercial-Public Leisure OSA and Academic Outcomes

This section examines the associations between participation in commercial-public OSA and primary school students academic outcomes. In addition, the section investigates whether engagement in commercial-public leisure OSA widens, narrows or maintains the socio-economic gap in children's academic outcomes.

The section focuses on children's participation in four activities: attendance at art venues; visits to cinemas; spectatorship of professional sports; and visits to theme-parks or funfairs. As has been discussed in Chapter 2, these activities were selected for the current research because they represent engagement in commercial-public leisure OSA associated with differing levels of cultural capital. More specifically, it has been shown that visits to art venues signify engagement in highbrow activity, while going to the cinema or to see live sports could be seen as participation in more midbrow activities and visits to theme-parks as a fairly lowbrow activity (see Chapter 2, p. 32). The inclusion of these different activities allows exploration of whether there is variation in the academic returns on participation in activities associated with differing levels of cultural capital.

Commercial-public activities and children's verbal performance and development

Table 5.6 displays results from models exploring the associations between participation in commercial-public leisure activities and children's verbal performance, as well as the associations with their verbal development between ages 5 and 7. The first Model in Table 5.6 is a performance Model, estimating the relationship between the cohort members' verbal test scores at age 7 and a range of socio-economic factors, family characteristics and attendance at commercial-public activities. The performance model also takes into account children's participation in a range of other leisure activities, outside the school.

Table 5.6: Associations between participation in ***commercial-public*** activities and children's ***verbal*** performance (*p<0.05, **p<0.01)

	Model 1: Age 7 Performance Coeff'/S.E.	**Model 2: Developmental Model** Coeff'/S.E.
Parental occupation (NS-SEC) (Ref: Routine/Manual)		
Intermediate	0.971** (0.28)	0.755** (0.27)
Managerial	1.814** (0.28)	1.281** (0.27)
Not working	-0.222 (0.32)	-0.014 (0.31)
Mother's working hours	-0.024** (0.01)	-0.017* (0.01)
Parental education (NVQ) (Ref: No formal qualification)		
GCSE or equivalent	1.498** (0.47)	0.902* (0.45)
A-levels or equivalent	2.754** (0.39)	1.699** (0.38)
University degree or equivalent	4.212** (0.42)	2.895** (0.40)
Household's income (Ref: Bottom quartile)		
2nd quartile	0.792** (0.28)	0.571* (0.27)
3rd quartile	1.584** (0.32)	1.134** (0.31)
Top quartile	2.307** (0.36)	1.578** (0.35)
Gender (Ref: Girl)		
Boy	-1.694** (0.18)	-1.474** (0.17)
Family characteristics		
Parenting composition (Ref: Co-parent household)		
Single-mother household	-0.414 (0.26)	-0.680** (0.25)
Adults in household (Ref: No)		
Yes	-0.165 (0.35)	0.188 (0.33)
Children in household (Ref: One child)		
Two children	-0.101 (0.28)	0.090 (0.27)
Three or more children	-0.856** (0.30)	-0.330 (0.29)
School type & educational measures		
School fee applied? (Ref: No)		
Yes	2.543** (0.51)	2.320** (0.49)
Absenteeism (Ref: Never)		
Rarely	-0.967** (0.21)	-0.905** (0.20)
Frequently	-2.631** (0.23)	-2.459** (0.22)
Participation in commercial-public leisure activities		
Ref: Never		
Visits to art venues - sweep 3	1.034** (0.37)	0.722* (0.35)
Visits to art venues - sweep 4	1.077** (0.24)	0.861** (0.23)
Visits to art venues - both sweeps	2.122** (0.24)	1.243** (0.24)
Visits to the cinema - sweep 3	0.516 (0.43)	0.271 (0.41)
Visits to the cinema - sweep 4	0.754* (0.32)	0.563 (0.31)
Visits to the cinema - both sweeps	1.485** (0.29)	1.082** (0.28)
Visits to sport events - sweep 3	-0.311 (0.36)	-0.617 (0.34)
Visits to sport events - sweep 4	0.263 (0.24)	0.255 (0.23)
Visits to sport events - both sweeps	0.688* (0.32)	0.715* (0.31)
Visits to theme parks - sweep 3	0.385 (0.31)	0.393 (0.30)
Visits to theme parks - sweep 4	0.033 (0.31)	0.141 (0.29)
Visits to theme parks - both sweeps	0.356 (0.26)	0.458 (0.25)
Participation in other out-of-school activities		
Home-centred leisure index	-0.059** (0.01)	-0.071** (0.01)
Out-of-school clubs index	0.148** (0.03)	0.109** (0.03)
Child's verbal score at age 5		0.265** (0.01)
Constant	46.322** (0.75)	34.372** (0.83)
N	11,243	11,145
Student Level Variance	80.70 (1.09)	73.53 (0.99)
Snijders/Bosker R^2 Student Level	0.298	0.196
Ward Level variance	4.69 (0.59)	6.26 (0.69)
Snijders/Bosker R^2 Ward Level	0.144	0.196
VPC (Variance Partition Coefficient)	0.055 (5.5%)	0.078 (7.8%)
-2LL	-40802.23	-39969.12

From this model it can be seen, firstly, that the SES gap in 7-year-olds' verbal test scores remains statistically significant when attendance at various out-of-school commercial-public activities is taken into account. The average verbal scores of children rise with their parents' level of education and occupational status, as well as with the family's income. Similarly, students in fee-paying schools score higher, on average, than counterparts in non-fee-paying schools. In contrast, being a boy, having a mother who works long hours, living in households with 3 or more siblings and missing many school days, are all associated with lower scores on the age 7 verbal test.

Secondly, Model 1 demonstrates positive associations between participation in commercial-public OSA and the age 7 test scores, but only in relation to 3 out of the 4 investigated activities. As can be seen, attendance at art venues, visits to the cinema and spectatorship of professional sport events, but not visits to theme-parks, are all associated with better performance on the age 7 verbal test. Furthermore, attendance at art venues appears to be associated with a greater increase in children's test scores than visits to the cinema, and visits to the cinema are linked to a larger increase than attendance at professional sport events.

Model 2 in Table 5.6 is a developmental model assessing the relationship between SES, participation in commercial-public activities and the cohort members' verbal development between ages 5 and 7. The positive associations between SES and the academic outcome of interest reduce but remain statistically significant in this model, indicating that children in higher SES groups make greater verbal progress between ages 5 and 7 relative to counterparts from lower SES groups.

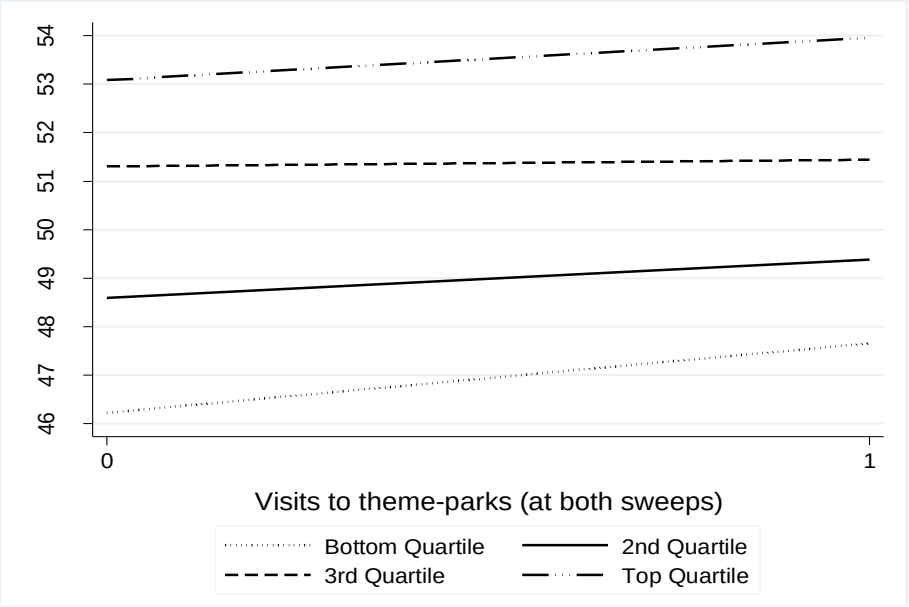
Similarly, Model 2 shows that the associations between participation in commercial-public leisure activities and the verbal gain-scores attenuate but hold. As can be seen, visits to theme-parks or funfairs appear not to be related to change in the verbal scores of children between ages 5 and 7. Conversely, there are significant results for the remaining activity types. Visits to art venues at age 5 alone are associated with a gain of 0.72 points on the verbal test, on average. Visits to art venues at age 7 alone are associated with a gain of 0.86 points, on average, on the verbal test. Visits to art venues at both ages 5 and 7 are associated with a gain of 1.24 point. This finding proposes that the verbal progress associated with visits to art venues is greater for children who attended these venues consistently at both sweeps than for peers who only attended such venues at a single time point.

For visits to the cinema and spectatorship of professional sport events the trend is again positive, but statistically significant only for children who attended these activities at both sweeps. These results lend further support to the idea that participation in commercial-public OSA consecutively at both sweeps is associated with greater verbal development in the middle childhood years than attendance at such OSA at a single time point. The Model 2 results, furthermore, indicate that the improvements associated with attendance at art venues are greater than those related to visits to the cinema, which in turn are somewhat larger than for sport spectatorship. Taken together, this trend provides support to the cultural capital hypothesis that highbrow cultural activities, mostly attended by middle and higher class children, are the ones which are most strongly associated with higher academic returns.

The associations between attendance at commercial-public OSA and children's verbal gain-scores were explored further by the introduction of interaction terms to the developmental model. These models were designed specifically to examine whether the relationships between children's verbal progress and attendance at commercial-public OSA differ by parental occupational status, educational level and the family's income. Results from the interaction models reveal that attendance at art venues, visits to the cinema and spectatorship of professional sports are not linked to variations in the progress of children from different SES groups on the verbal test. This finding implies that the verbal improvement associated with participation in these three activity types, at both sweeps consecutively, are similar in magnitude for children from low, intermediate and high SES families alike.

The interaction models, however, provide some evidence of a small differential effect of visits to theme-parks on the verbal score gains of children in different income quartiles. Figure 5.6 displays the predicted values from the relevant model (the full model estimations are given in Table 7D – appendix 7, p.438). As can be seen, visits to theme-parks/funfairs consistently at both sweeps are associated with an improvement of about 1.5 points on the verbal test amongst children living in households that "fall" into the bottom income quartile, compared to an improvement of roughly 1.0 point for counterparts in the top income quartile, and an even smaller or no improvement in the average verbal score of children in the two intermediate income quartiles. Taken together, these trends reflect a reduction of about half a point in the verbal development gap of children at the extreme ends of the income distribution.

Figure 5.6: Interaction between income and visits to theme-parks/funfair on the verbal gain-scores (N=11,145)*



* Predicted values from Table 7D in Appendix 7 (p. 438). Other IVs set at

It should be noted, however, that there are no significant variations in the verbal progress of children by visits to theme-parks and parental educational or occupational levels. When regressed against the verbal outcome, visits to theme-parks appear not to be linked to changes in the verbal scores of children, regardless of how well educated their parents are or the parents' occupational status. Thus, it could be that this activity type is more closely linked to the economic resources of the family than to other socio-economic indicators, namely parental education or occupation.

Commercial-public activities and children's non-verbal performance and development

Table 5.7 displays results from models exploring the associations between participation in commercial-public leisure OSA and children's non-

verbal performance, as well as their verbal development in the middle childhood years.

Here, too, the first model is a performance model. In keeping with previous "performance" models discussed in this thesis, this model demonstrates a socio-economic gap in 7-year-olds' achievement. So, not only do children in higher SES groups score better on the age 7 verbal test, they also achieve higher scores on the age 7 non-verbal test. Likewise, the model shows that having a mother who works long hours, being a boy, or having a record of frequent absences from school, is related to lower performance on the age 7 non-verbal test. In contrast, the family characteristics and the school type are not significantly correlated with 7-year-olds' non-verbal test scores.

In addition, Model 1 presents associations between participation in commercial-public OSA and children's non-verbal test scores. As can be seen, visits to art venues, as well as visits to the cinema, but not spectatorship at professional sport events or attendance at theme-parks or funfairs, are linked to higher scores on the age 7 non-verbal test. Moreover, the average non-verbal score is higher for children who visited art venues and cinemas consecutively at both sweeps than for children who have only participated in these two activity forms in the 12 months prior to their sweep 4 interview.

In keeping with previous findings detailed in this thesis, these results suggest that exposure to leisure OSA over a long period of time is related to better academic outcomes relative to experiencing such activities for a shorter time period.

Table 5.7: Associations between participation in ***commercial-public*** leisure activities and children's ***non-verbal*** performance (*p<0.05, **p<0.01)

	Model 1: Age 7 Performance Coeff'/S.E.	**Model 2: Developmental Model** Coeff'/S.E.
Child, parents and household factors		
Parental occupation (NS-SEC) (Ref: Routine/Manual)		
Intermediate	0.901** (0.32)	0.735** (0.27)
Managerial	1.626** (0.32)	1.224** (0.28)
Not working	-0.080 (0.37)	0.263 (0.32)
Mother's working hours	-0.019* (0.01)	-0.008 (0.01)
Parental education (NVQ) (Ref: No formal qualification)		
GCSE or equivalent	0.266 (0.54)	-0.240 (0.46)
A-levels or equivalent	2.121** (0.44)	0.468 (0.38)
University degree or equivalent	2.903** (0.48)	0.917* (0.41)
Household's income (Ref: Bottom quartile)		
2nd quartile	0.732* (0.32)	0.431 (0.28)
3rd quartile	1.044** (0.37)	0.706* (0.32)
Top quartile	2.025** (0.41)	1.175** (0.35)
Gender (Ref: Girl)		
Boy	-0.672** (0.20)	0.329 (0.17)
Family characteristics		
Parenting composition (Ref: Co-parent household)		
Single-mother household	-0.054 (0.29)	-0.181 (0.25)
Adults in household (Ref: No)		
Yes	-0.700 (0.39)	0.022 (0.34)
Children in household (Ref: One child)		
Two children	0.608 (0.32)	0.408 (0.27)
Three or more children	0.533 (0.34)	0.542 (0.29)
School type and educational measures		
School fee applied? (Ref: No)		
Yes	1.022 (0.57)	0.916 (0.49)
Absenteeism (Ref: Never)		
Rarely	-0.364 (0.23)	-0.073 (0.20)
Frequently	-1.550** (0.26)	-0.800** (0.22)
Participation in commercial-public leisure activities		
Ref: Never		
Visits to art venues - sweep 3	0.322 (0.42)	0.149 (0.36)
Visits to art venues - sweep 4	1.231** (0.28)	0.576* (0.24)
Visits to art venues - both sweeps	2.320** (0.28)	1.440** (0.24)
Visits to the cinema - sweep 3	0.998* (0.49)	0.574 (0.42)
Visits to the cinema - sweep 4	1.182** (0.37)	0.916** (0.32)
Visits to the cinema - both sweeps	1.450** (0.33)	0.965** (0.28)
Visits to sport events - sweep 3	0.612 (0.40)	-0.090 (0.35)
Visits to sport events - sweep 4	-0.467 (0.28)	-0.472 (0.25)
Visits to sport events - both sweeps	-0.375 (0.36)	-0.447 (0.31)
Visits to theme parks - sweep 3	-0.458 (0.36)	-0.696* (0.30)
Visits to theme parks - sweep 4	-0.652 (0.35)	-0.571 (0.30)
Visits to theme parks - both sweeps	0.083 (0.29)	-0.189 (0.25)
Participation in other out-of-school activities		
Home-centred leisure index	-0.016 (0.01)	-0.009 (0.01)
Out-of-school clubs index	0.180** (0.04)	0.103** (0.03)
Child's non-verbal score at age 5		0.569** (0.01)
Constant	47.609** (0.85)	21.194** (0.84)
N	**11,341**	**11,226**
Student Level Variance	104.96 (1.41)	76.62 (1.04)
Snijders/Bosker R^2 Student Level	0.301	0.532
Ward Level variance	4.28 (0.61)	2.58 (0.40)
Snijders/Bosker R^2 Ward Level	0.087	0.331
VPC (Variance Partition Coefficient)	0.039 (3.9%)	0.033 (3.3%)
-2LL	-42614.38	-40400.11

The second Model in Table 5.7 is a developmental model. Consistently with the previous developmental models presented in this thesis, this model shows that, between ages 5 and 7, the non-verbal development of children in higher SES groups is greater than the non-verbal development of peers in lower SES families. There is no significant relationship between a child's gender or the mother's working hours and non-verbal development between ages 5 and 7.

In addition, Model 2 in Table 5.7 displays associations between participation in commercial-public leisure OSA and children's non-verbal development, as reflected by the scores on the BAS2 sub-test. As can be seen, children who attended art venues or cinemas, at age 7 alone or at age 5 and 7 consecutively (but not at age 5 alone), improved their non-verbal test scores more than children who did not visit similar venues. This finding echoes results presented earlier by the developmental model of Table 5.6, which showed a positive relationship between visits to art venues and cinemas and children's verbal gain-scores.

In contrast to the developmental model of Table 5.6, Model 2 in Table 5.7 demonstrates a lack of association between sport spectatorship and children's non-verbal development. There is also a negative relationship between visits to theme-parks at age 5, and children's non-verbal development. The negative coefficient proposes that cohort members who visited theme-parks at age 5, but not at age 7 or at both ages consistently, improved their non-verbal test scores less than counterparts who never experienced this activity type in the middle childhood years.

To examine whether the relationships between children's non-verbal score gains and attendance at commercial-public OSA differ by parental

occupational status, educational level and the family's income, interaction terms were added to the developmental model. Results from these models show that attendance at art venues and visits to the cinema are associated with similar improvement on the non-verbal test across all SES groups. This means that, regardless of their SES, children who attended these two activity forms show comparable progress on the non-verbal test in the middle childhood years. For attendance at sport events, the coefficients are not significant and there is also no variation across the SES levels, implying that sport spectatorship is not related to changes in the non-verbal scores of children between ages 5 and 7, and this trend appears in all SES groups. Finally, the results provide no evidence that there are consistent variations in the non-verbal score gains by children's SES and attendance at theme-parks or funfairs. This implies that, irrespective of the cohort members' SES, attendance at theme-parks at age 5 is related to a small delay in the non-verbal skills development of children, relative to the non-verbal progress of children who did not attend such venues. Visits to theme-parks at age 7, as well as at ages 7 and 5 consecutively, seem not to be related to children's non-verbal development in the middle childhood years.

Commercial-public activities and the teacher's assessment

Table 5.8 displays results from models exploring the associations between participation in commercial-public leisure OSA and the age 7 teacher's assessment, as well as teachers' perceptions of their students' academic development between ages 5 and 7.

In keeping with all previous "performance" models presented thus far in this thesis, Model 1 in Table 5.8 displays a socio-economic gap in children's academic achievement: the teachers' assessment scores incrementally increase with their students' SES. As has been shown earlier, this gap in perceived skills remains statistically significant even when children's participation in commercial-public leisure OSA, as well as a range of other leisure activities, is taken into consideration.

Taken together with previous findings, this means that not only do children in higher SES groups achieve better scores, on average, on the age 7 verbal and non-verbal standardised tests, they are also rated as more academically skilled by their teachers. Furthermore, Model 1 in Table 5.8 shows that having a mother who works long hours, being a boy, or missing many school days, is related to lower ratings on the age 7 teacher's assessment. No significant differences are found between the ratings of teachers in fee-paying and non-fee-paying schools.

With regard to participation in commercial-public OSA, Model 1 demonstrates, again, that attendance at art venues, cinemas and professional sport events, is associated with higher assessment scores.

Attendance at art venues or the cinema consecutively at ages 5 and 7 is associated with a higher score on the teacher's assessment than attendance at only one time point. For spectatorship at professional sport events, the trend is only significant for cohort members who attended such events at sweep 4. There are no significant associations between visits to theme-parks/funfairs and the teacher's age 7 assessment.

Table 5.8: Associations between participation in ***commercial-public*** leisure activities and the ***teachers' assessment*** (*p<0.05, **p<0.01)

	Model 1: Age 7 Performance Coeff'/S.E.	**Model 2: Developmental Model** Coeff'/S.E.
Child, parents and household factors		
Parental occupation (NS-SEC) (Ref: Routine/Manual)		
Intermediate	0.652 (0.35)	0.299 (0.32)
Managerial	1.860** (0.36)	1.291** (0.32)
Not working	-0.571 (0.42)	-0.171 (0.38)
Mother's working hours	-0.023** (0.01)	-0.010 (0.01)
Parental education (NVQ) (Ref: No formal qualification)		
GCSE or equivalent	0.521 (0.63)	-0.033 (0.57)
A-levels or equivalent	1.995** (0.51)	0.302 (0.47)
University degree or equivalent	2.932** (0.55)	1.101* (0.50)
Household's income (Ref: Bottom quartile)		
2nd quartile	1.035** (0.37)	0.164 (0.34)
3rd quartile	1.951** (0.41)	0.722 (0.38)
Top quartile	2.865** (0.45)	1.204** (0.41)
Gender (Ref: Girl)		
Boy	-1.178** (0.22)	0.487* (0.20)
Family characteristics		
Parenting composition (Ref: Co-parent household)		
Single-mother household	-0.457 (0.33)	-0.136 (0.30)
Adults in household (Ref: No)		
Yes	-1.026* (0.45)	-0.747 (0.41)
Children in household (Ref: One child)		
Two children	0.621 (0.33)	0.204 (0.31)
Three or more children	0.158 (0.37)	0.149 (0.33)
School type and educational measures		
School fee applied? (Ref: No)		
Yes	1.102 (0.59)	-0.711 (0.77)
Absenteeism (Ref: Never)		
Rarely	-1.155** (0.26)	-0.588* (0.23)
Frequently	-2.889** (0.28)	-1.671** (0.25)
Participation in commercial-public leisure activities		
Ref: Never		
Visits to art venues - sweep 3	0.862* (0.42)	0.356 (0.42)
Visits to art venues - sweep 4	1.181** (0.30)	0.533 (0.28)
Visits to art venues - both sweeps	2.084** (0.30)	0.991** (0.28)
Visits to the cinema - sweep 3	1.136* (0.55)	-0.523 (0.49)
Visits to the cinema - sweep 4	1.207** (0.41)	-0.096 (0.37)
Visits to the cinema - both sweeps	2.217** (0.36)	0.169 (0.33)
Visits to sport events - sweep 3	-0.144 (0.43)	0.027 (0.39)
Visits to sport events - sweep 4	0.877** (0.30)	0.253 (0.27)
Visits to sport events - both sweeps	0.229 (0.40)	-0.336 (0.36)
Visits to theme parks - sweep 3	-0.094 (0.39)	0.235 (0.35)
Visits to theme parks - sweep 4	-0.142 (0.38)	0.328 (0.34)
Visits to theme parks - both sweeps	-0.343 (0.32)	0.097 (0.29)
Participation in other out-of-school activities		
Home-centred leisure index	-0.044** (0.01)	-0.033** (0.01)
Out-of-school clubs index	0.237** (0.04)	0.050 (0.04)
Teacher's assessment at age 5		0.579** (0.01)
Constant	45.28** (0.95)	19.99** (0.95)
N	**7,305**	**6,042**
Student Level Variance	81.48 (1.38)	54.95 (1.03)
Snijders/Bosker R^2 Student Level	0.303	0.371
Ward Level variance	2.27 (0.49)	2.98 (0.49)
Snijders/Bosker R^2 Ward Level	0.155	0.405
VPC (Variance Partition Coefficient)	0.027 (2.7%)	0.051 (5.1%)
-2LL	-26512.67	-20781.29

Model 2 in Table 5.8 displays results from a developmental model. As can be seen from this Model, children's scores on the teacher's assessment improve more, between ages 5 and 7, for students who live in high SES families, boys, and those who maintain regular school attendance. Furthermore, the developmental model shows that, once the age 5 assessment's scores are taken into account, the average score on the teacher's assessment improves by nearly 1.0 point for children who consistently visited art venues in the middle childhood years, compared to counterparts who never attended similar venues in these years. Conversely, the associations between the teacher's assessment score and visits to the cinema and attendance at sport events decline to an insignificant level: it seems that visits to such venues is not linked to academic skills development, as reflected by the teacher's assessment.

Additional interaction models that were fitted to explore whether the association between attendance at commercial-public OSA and the score gains of children's in different SES groups on the teacher's assessment did not show significant results. This finding implies that, among the four commercial-public OSA explored in this project, only attendance at art venues is linked to child's improvement in academic performance as measured by teacher's assessment. Visits to the cinema, and to some extent attendance at professional sport events, are associated with better performance on the age 7 assessment, but not with score gains between ages 5 and 7.

This could mean that the positive relationships between these two activity forms and the age 7 assessment scores, reported by the performance model of Table 5.8, are fully mediated by children's prior assessment results.

It is possible that the connection between the cohort members' performance at age 7 and attendance at the cinema, as well as spectatorship at sport events, reflects skills that were developed before they reached their 5th birthday. For example, it may be that children who are exposed to these two activity types in the middle childhood years also have a history of frequent participation in a range of other activities in the pre-school years, and this could potentially have lasting developmental returns which are captured by the age 7 assessment. Of course, other factors may explain this finding. For instance, changes in the parents' childrearing practices or residential moves between the two MCS sweeps could have led to a change in the cohort member's academic skills development, as assessed by the teacher, and this may also be associated with participation in the two OSA under discussion. Finally, the finding could represent a methodological limitation. It is possible that, as a result of the limited number of assessments that were gathered from teachers, none of the interaction terms has reached statistical significance. At each of the two study sweeps that were analysed for this research, assessments were gathered for about 70% of the sampled cohort children.

5.3.5 Summary: Commercial-Public OSA and Academic Outcomes

It is now possible to discuss the results presented in section 5.3.4, which explored the associations between 7-year-olds' academic outcomes and their participation in four commercial-public leisure OSA, representing

distinct locations on the highbrow-lowbrow cultural scale. Table 5.8A below summarises the general trends presented by the models in section 5.3.4.

Table 5.8A: The associations between participation in commercial-public OSA and academic outcomes, by socio-economic strata - summary

		Verbal Scores		Non-verbal Scores		Teacher's assessment	
		Age 7	Devel'	Age 7	Devel'	Age 7	Devel'
Art Venues	Higher/ Intermediate Strata	+	+	+	+	+	+
	Lower Strata		+		+		+
Cinemas	Higher/ Intermediate Strata	+	+	+	+	+	n.s.
	Lower Strata		+		+		n.s.
Sport Events	Higher/ Intermediate Strata	+	+	n.s.	n.s.	+	n.s.
	Lower Strata		+		n.s.		n.s.
Theme-parks/ Funfairs	Higher/ Intermediate Strata	n.s.	n.s./+*	n.s.	-**	n.s.	n.s.
	Lower Strata		+		-**		n.s.

* Only with income. **Only in sweep 3.

As discussed formerly in Chapter 4, children's participation in commercial-public leisure OSA is stratified by SES: children belonging to higher strata, compared to counterparts from the lower stratum, are more likely to participate in the four explored activities, but the "strength" of the association depends on the type of activity in question. The greatest socio-economic disparity is found in relation to the likelihood of attendance at art venues and this is followed by the chances of going to the cinema. Spectatorship of professional sport events and visits to theme-parks and funfairs, in particular, are less strongly linked to SES.

This pattern of socio-economic stratification in children's participation in commercial-public leisure activities outside the school may be characterised by a combination of Bourdieu's (1984) "homology"

hypothesis and Peterson's (1992) "omnivore" vs. "univore" distinction. This is because, while children from middle and upper strata, compared to peers from the lower stratum, are more likely to attend all the above activities and hence exhibit an omnivore's participation pattern, the probability of participation is even greater when activities traditionally referred to as more highbrow in nature are considered.

The analyses presented in section 5.3.4 propose that the four investigated commercial-public leisure OSA also differ in the magnitude of their relationship with the academic performance of children, and their academic development in the middle childhood years.

These analyses provide evidence that, amongst the four explored activities, only visits to art venues are associated with score gains on all three academic outcomes, namely the verbal and non-verbal standardised tests and the teacher's assessment. Furthermore, the academic improvements associated with visits to art venues are found across all SES strata: irrespective of their socio-economic background, children who attended art venues consistently at sweeps 3 and 4 showed greater gains on all three outcomes relative to peers who never attended similar venues in the middle childhood years.

A similar trend was found in relation to attendance at the cinema: cohort members who attended the cinema, especially at both sweeps consecutively, presented greater academic progress than counterparts who never attended the cinema outside the school day. However, in this case positive associations were found in only two out of the three academic outcomes of interest, namely the verbal and non-verbal tests. There were no statistically significant interaction effects between cinema attendance and

SES on these two academic outcomes. Furthermore, from the results of the performance models in Tables 5.6-5.8, and the developmental models in Tables 5.6 and 5.7, it appears that the improvements associated with attendance at art venues are greater than those related to visits to the cinema. This finding lends some weight to the cultural capital hypothesis that the former, more highbrow activity type could bring greater developmental benefits than the latter one. However, the absence of interactions between SES and attendance at art venues and visits to the cinema is inconsistent with the classical Bourdieunian hypothesis. This is because the traditional cultural capital theory predicts greater academic returns from exposure to highbrow cultural forms for individuals in high SES groups relative to peers in lower SES groups.

Spectatorship of professional sport events was found to be positively linked to children's verbal performance at age 7 as well as to their verbal progress between ages 5 and 7. However, the association between this activity type and the verbal outcome (performance and development) was noticeably smaller than the correlation with attendance at art venues and visits to the cinema. Furthermore, there were no interactions between attendance and socio-economic background, suggesting that sport spectatorship is related to similar verbal score gains for children across the SES levels. Sport spectatorship, however, appeared not to be linked to progress on the non-verbal test or the teacher's assessment. These trends, too, were found in all SES groups.

Finally, the analyses in section 5.3.4 demonstrated variations in the associations between SES and attendance at theme-parks and funfairs, but only in relation to progress on the verbal test. In general, the interaction

demonstrated more positive results for children in low SES groups than for counterparts in intermediate and high strata. The verbal improvement associated with visits to theme-parks was either smaller or not significant for cohort members in high and intermediate SES groups compared to peers in very low SES families. However, the section also showed that visits to theme-parks and funfairs are linked to a small fall in the non-verbal scores of children, irrespective of their SES.

Taken together, the findings presented in the previous section propose that exposure to highbrow-midbrow activities, that is, going to art venues and the cinema, is associated with better academic performance and greater academic progress of children from all SES groups. In comparison, experiencing more lowbrow activity forms is related to verbal score gains mainly for children growing up in very low SES families, and to a drop in the non-verbal scores of children from all SES levels (but only for those who visited the respected activity at age 5).

Participation in Commercial-Public OSA and the Socio-Economic Gap in Children's Academic Outcomes

The results presented in section 5.3.4 have implications for the reproduction of the socio-economic gap in children's academic performance and development. Taking a broad overview of the findings, it is possible to argue that, as with participation in social-group activities, attendance at commercial-public OSA may contribute to the reproduction of the gap in the academic outcomes of children from dissimilar SES groups.

The reason for that is that, while engagement in some commercial-public OSA is linked to better academic outcomes, at the same time children who grow up in socio-economically advantaged homes, compared to peers who live in less socio-economically advantaged families, are more likely to participate in these OSA. Thus, children from higher-SES families, who have higher academic outcomes to begin with, also have a better chance of accumulating the academic gains associated with participation in the discussed leisure OSA.

Moreover, the results in this thesis indicate that the positive association between SES and participation in commercial-public OSA is especially strong in the case of highbrow-midbrow activities such as visits to art venues or the cinema. In addition, the academic returns on participation in the explored highbrow-midbrow commercial-public OSA are greater than returns on participation in lowbrow activities.

So, children in higher-SES groups are more likely to participate in the kinds of activities that may best enhance their academic development, while counterparts in lower-SES groups are less likely to be exposed to commercial-public OSA associated with larger academic gains.

Nevertheless, the analyses also show that, while engagement in highbrow and midbrow commercial-public OSA is linked to better academic performance and development among children in both high- and low-SES homes, those who live in low-SES families also exhibit some academic progress if they consistently attend more lowbrow leisure activities, namely visits to theme-parks or funfairs. This finding suggests that children who grow up in considerably disadvantaged socio-economic circumstances may benefit academically from exposure to a wider range of leisure activities.

5.3.6 Home-Centred Leisure Activities and Academic Outcomes

The final category of activities explored in this research project consists of home-centred leisure activities. Here, too, four different activities were chosen with the purpose of representing the full spectrum of cultural capital levels. That includes engagement in parent-child shared reading, shared creative activities and joint indoor play, as well as the child's usage of electronic media. The reading activity has been chosen as an example of highbrow leisure activity, following the theoretical literature and associated empirical studies reviewed in Chapter 2. Engagement in shared creative activities and joint indoor play, in contrast, exemplify more midbrow activities, and usage of electronic media is used to illustrate involvement in a fairly lowbrow activity.

The next sections examine the association between the level of engagement in the four home-centred leisure activities at age 5 and 7, and 7-year-olds' academic performance as well as their academic development in the middle childhood years.

Home-centred activities and children's verbal performance and development

Table 5.9 presents results from models exploring the associations between children's engagement in home-centred leisure activities and their verbal performance, as well as the associations with the children's verbal development in the middle childhood years.

First, Model 1 in Table 5.9 investigates the relationship between engagement in home-centred leisure activities and children's verbal performance at age 7. Consistently with the previous performance models of this thesis, a socio-economic disparity in 7-year-olds' verbal performance remains once engagement in home-centred activities is added: participation in such activities does not cancel out the link between SES and students' verbal test scores. The associations reported earlier by Model 1 in Table 5.2 between students' verbal performance and gender, school type and absenteeism, but not having 3 or more siblings, also hold.

The performance Model in Table 5.9 shows that there is no significant relationship between the level of engagement in shared reading or the number of hours children use electronic media in their homes, and their age 7 verbal performance. In addition, the Model demonstrates a negative association between the level of engagement in shared creative activities and the age 7 verbal performance, but this only applies for children who were highly engaged in this activity type relative to counterparts who rarely engaged in similar activities.

Conversely, there is a positive association between the time children spend in joint indoor play and their verbal test scores at age 7: children who engaged in familial play in the home environment to a moderate or high level achieved better scores than peers who engaged less frequently in this form of activity.

Table 5.9: Associations between engagement in ***home-centred*** leisure activities and children's ***verbal*** performance and development (*p<0.05, **p<0.01)

	Model 1: Age 7 Performance Coeff'/S.E.	**Model 2: Developmental Model** Coeff'/S.E.
Child, parents and household factors		
Parental occupation (NS-SEC) (Ref: Routine/Manual)		
Intermediate	0.953** (0.27)	0.734** (0.27)
Managerial	1.668** (0.28)	1.210** (0.27)
Not working	-0.151 (0.31)	0.112 (0.31)
Mother's working hours	-0.021** (0.01)	-0.015* (0.01)
Parental education (NVQ) (Ref: No formal qualification)		
GCSE or equivalent	1.549** (0.45)	0.822 (0.45)
A-levels or equivalent	2.669** (0.37)	1.541** (0.38)
University degree or equivalent	4.163** (0.40)	2.736** (0.41)
Household's income (Ref: Bottom quartile)		
2nd quartile	0.660* (0.27)	0.563* (0.27)
3rd quartile	1.312** (0.32)	1.086** (0.31)
Top quartile	2.097** (0.35)	1.552** (0.35)
Gender (Ref: Girl)		
Boy	-1.798** (0.17)	-1.543** (0.17)
Family characteristics		
Parenting composition (Ref: Co-parent household)		
Single-mother household	-0.317 (0.25)	-0.486* (0.25)
Adults in household (Ref: No)		
Yes	-0.065 (0.34)	0.282 (0.33)
Children in household (Ref: One child)		
Two children	-0.189 (0.27)	0.081 (0.27)
Three or more children	-0.890** (0.29)	-0.310 (0.29)
School type and educational measures		
School fee applied? (Ref: No)		
Yes	2.646** (0.50)	2.312** (0.49)
Absenteeism (Ref: Never)		
Rarely	-1.045** (0.20)	-0.932** (0.20)
Frequently	-2.540** (0.22)	-2.452** (0.22)
Engagement in home-centred activities		
Ref: Low		
Shared reading - moderate	-0.034 (0.36)	0.263 (0.38)
Shared reading - high	0.231 (0.37)	0.410 (0.39)
Shared creative activities - moderate	-0.201 (0.28)	-0.254 (0.28)
Shared creative activities - high	-1.235** (0.31)	-1.184** (0.31)
Shared indoor games - moderate	0.630* (0.25)	0.712** (0.25)
Shared indoor games - high	0.639* (0.32)	1.045** (0.32)
Media usage - moderate	-0.790 (0.43)	0.016 (0.57)
Media usage - high	-0.769 (0.45)	0.259 (0.59)
Participation in other OSA		
Commercial-public leisure	0.543** (0.05)	0.325** (0.05)
out-of-school clubs	0.121** (0.03)	0.094** (0.03)
Child's verbal performance at age 5		0.261** (0.01)
Constant	44.039** (0.65)	30.821** (0.07)
N	**11,813**	**11,177**
Student Level Variance	81.20 (1.07)	73.67 (1.00)
Snijders/Bosker R^2 Student Level	0.257	0.164
Ward Level variance	5.14 (0.62)	6.61 (0.72)
Snijders/Bosker R^2 Ward Level	0.141	0.192
VPC (Variance Partition Coefficient)	0.059 (5.9%)	0.082 (8.2%)
-2LL	-42912.07	-40100.52

Next, Model 2 in Table 5.9 explores the relationship between children's level of engagement in home-centred leisure activities and their verbal progress in the middle childhood years. The Model finds no relationship between verbal development and the level of engagement in shared reading or the frequency with which children use electronic media. In contrast, Model 2 demonstrates significant associations between children's verbal development and their level of engagement in shared creative activities and indoor play. But, while engagement in shared indoor play is linked to improvement of roughly 0.7 to 1.0 points in the average verbal score, depending on how frequently the child was involved in this activity form, the trend for children who are highly engaged in shared creative activities is in the opposite direction. This negative pattern indicates that those who were rarely engaged in shared creative activities in the home environment progressed more in terms of their performance on the verbal test than counterparts who were frequently engaged in this form of home activity.

Additional models that were fitted to examine whether parental occupational and educational levels, and the family's income, interact with the four home-centred activities of interest in relation to children's verbal gain-scores found no significant associations. This indicates that the results reported in Model 2 of Table 5.9 hold regardless of children's SES. In other words, the lack of relationship between verbal development in the middle childhood years and shared reading, as well as electronic media usage, is evident in all socio-economic strata. Similarly, the negative association between children's verbal development and engagement in shared creative

activities, and the positive association with shared indoor play, is similar in magnitude for children in both high- and low-SES groups.

Home-centred activities and children's non-verbal performance and development

Table 5.10 presents results from models exploring the associations between engagement in home-centred leisure activities and children's non-verbal performance, as well as the associations with their non-verbal development between ages 5 and 7.

The performance Model of Table 5.10 shows that out of the four investigated home-centred activities, only participation in shared creative activities is linked to 7-year-olds' non-verbal performance. After controlling for SES, family characteristics, school type, absenteeism and a range of out-of-school leisure activities, at age 7, cohort members who were moderately engaged in shared creative activities in the home environment obtained a non-verbal score higher by about 1 point than counterparts who rarely participated in this form of activity. Similarly, the average score on the age 7 non-verbal test is estimated to be higher by about 1.28 points for children who were highly engaged in shared creative activities relative to children who rarely engaged in such activities.

This trend is the opposite of that shown by the verbal performance Model in Table 5.9, according to which children who are frequently engaged in shared creative activities achieve lower verbal scores, on average, compared to peers who are less frequently engaged in similar activities.

Table 5.10: Associations between engagement in ***home-centred*** leisure activities and children's ***non-verbal*** performance (*p<0.05, **p<0.01)

	Model 1: Age 7 Performance Coeff'/S.E.	**Model 2: Developmental Model** Coeff'/S.E.
Child, parents and household factors		
Parental occupation (NS-SEC) (Ref: Routine/Manual)		
Intermediate	0.809** (0.31)	0.752** (0.27)
Managerial	1.429** (0.32)	1.215** (0.28)
Not working	-0.053 (0.35)	0.322 (0.32)
Mother's working hours	-0.018* (0.01)	-0.009 (0.01)
Parental education (NVQ) (Ref: No formal qualification)		
GCSE or equivalent	0.472 (0.51)	-0.280 (0.46)
A-levels or equivalent	2.134** (0.42)	0.379 (0.38)
University degree or equivalent	3.020** (0.46)	0.923* (0.41)
Household's income (Ref: Bottom quartile)		
2nd quartile	0.585 (0.31)	0.410 (0.28)
3rd quartile	1.046** (0.36)	0.743* (0.32)
Top quartile	2.123** (0.40)	1.264** (0.35)
Gender (Ref: Girl)		
Boy	-0.725** (0.19)	0.250 (0.17)
Family characteristics		
Parenting composition (Ref: Co-parent household)		
Single-mother household	0.049 (0.28)	-0.020 (0.25)
Adults in household (Ref: No)		
Yes	-0.764* (0.38)	0.034 (0.34)
Children in household (Ref: One child)		
Two children	0.604 (0.31)	0.430 (0.27)
Three or more children	0.642 (0.33)	0.622* (0.29)
School type and educational measures		
School fee applied? (Ref: No)		
Yes	1.171* (0.57)	1.014* (0.49)
Absenteeism (Ref: Never)		
Rarely	-0.387 (0.23)	-0.058 (0.20)
Frequently	-1.526** (0.25)	-0.775** (0.22)
Engagement in home-centred activities		
Ref: Low		
Shared reading - moderate	0.364 (0.41)	0.331 (0.39)
Shared reading - high	-0.775 (0.42)	-0.401 (0.39)
Shared creative activities - moderate	1.003** (0.31)	0.679* (0.28)
Shared creative activities - high	1.283** (0.35)	0.913** (0.31)
Shared indoor games - moderate	0.191 (0.28)	-0.074 (0.26)
Shared indoor games - high	-0.535 (0.37)	-0.225 (0.33)
Media usage - moderate	-0.572 (0.48)	-0.043 (0.57)
Media usage - high	-0.918 (0.51)	-0.273 (0.59)
Participation in other out-of-school activities		
Commercial-public leisure index	0.523** (0.06)	0.290** (0.05)
Out-of-school clubs index	0.154** (0.04)	0.086** (0.03)
Child's non-verbal score at age 5		0.567** (0.01)
Constant	45.867** (0.73)	19.873** (0.96)
N	**11,915**	**11,259**
Student Level Variance	105.62 (1.38)	76.74 (1.03)
Snijders/Bosker R^2 Student Level	0.335	0.542
Ward Level variance	4.10 (0.59)	2.50 (0.39)
Snijders/Bosker R^2 Ward Level	0.092	0.331
VPC (Variance Partition Coefficient)	0.037 (3.7%)	0.032 (3.2%)
-2LL	-44801.4	-40524.98

Taken together, these results seem to testify that these activities are more important for children's non-verbal achievement.

Model 2 in Table 5.10 includes children's age 5 non-verbal scores. As can be seen, the coefficients in this Model are relatively similar to those presented in the performance model of Table 5.10. That is: after controlling for children's results from the age 5 non-verbal test, engagement in shared creative activities, but not in shared reading, joint indoor play or media usage, is associated with developmental gains. The predicted non-verbal test scores of children who were highly engaged in shared creative activity improve by about 0.9 points compared to the test scores of peers who rarely engaged in such activities with their parents.

To further explore the relationship between academic development in the middle childhood years, SES and participation in leisure activities in the home environment, interaction models were fitted. Results from these models show no variations in the changes in non-verbal scores by SES and the level of engagement in the four home-centred activities under discussion. This finding implies that, regardless of children's SES, neither participation in shared reading and joint indoor play, nor media usage, is linked to progress on the non-verbal test. Frequent engagement in shared creative activities, in contrast, is associated with score gains which are similar in size for children in high, intermediate and low SES groups alike. It is worth noting that this trend is the opposite of that shown by the developmental Model in Table 5.9, according to which there is a negative association between children's verbal improvement and the frequency of their engagement in shared creative activities in the home environment.

Table 5.11 displays results from models exploring the associations between children's engagement in home-centred leisure activities and their teachers' assessments, as well as with the teachers' perception of the students' academic development between ages 5 and 7.

Model 1 in Table 5.11 is a performance model. As can be seen, children's scores on the teacher's assessment increase with their SES, taking into consideration children's engagement in a range of home-centred leisure activities, as well as participation in other forms of leisure OSA. In keeping with other performance models, there is no relationship between family characteristics and the teacher's assessment score. Conversely, being a girl, maintaining regular school visits and studying in a fee-paying school, are all associated with higher scores on the age 7 assessment.

In regard to this, Model 1 shows that there is little association between the level of engagement in home-centred activities and the age 7 teacher's assessment score. Out of the 4 investigated activities in this category, only shared creative activities are linked to performance on the teacher's assessment.

That is, frequent engagement in shared creative activities is associated with a lower score on the assessment. Shared reading, joint indoor play and media usage all seem not to be associated with the teachers' age 7 assessment scores.

Table 5.11: Associations between participation in ***home-centred*** leisure activities and the ***teachers' assessments*** (*p<0.05, **p<0.01)

	Model 1: Age 7 Performance Coeff'/S.E.	**Model 2: Developmental Model** Coeff'/S.E.
Child, parents and household factors		
Parental occupation (NS-SEC) (Ref: Routine/Manual)		
Intermediate	0.633 (0.35)	0.312 (0.32)
Managerial	1.714** (0.35)	1.320** (0.32)
Not working	-0.513 (0.41)	-0.141 (0.38)
Mother's working hours	-0.020* (0.01)	-0.010 (0.01)
Parental education (NVQ) (Ref: No formal qualification)		
GCSE or equivalent	0.499 (0.60)	-0.083 (0.57)
A-levels or equivalent	1.963** (0.49)	0.184 (0.47)
University degree or equivalent	2.966** (0.53)	1.045* (0.50)
Household's income (Ref: Bottom quartile)		
2nd quartile	0.944** (0.36)	0.153 (0.36)
3rd quartile	1.790** (0.40)	0.737^ (0.38)
Top quartile	2.861** (0.44)	1.248** (0.42)
Gender (Ref: Girl)		
Boy	-1.276** (0.21)	0.469* (0.20)
Family characteristics		
Parenting composition (Ref: Co-parent household)		
Single-mother household	-0.218 (0.32)	-0.022 (0.30)
Adults in household (Ref: No)		
Yes	-0.828 (0.44)	-0.738 (0.41)
Children in household (Ref: One child)		
Two children	0.631 (0.34)	0.244 (0.31)
Three or more children	0.280 (0.36)	0.248 (0.33)
School type and educational measures		
School fee applied? (Ref: No)		
Yes	1.230* (0.59)	-0.633 (0.77)
Absenteeism (Ref: Never)		
Rarely	-1.126** (0.25)	-0.565* (0.23)
Frequently	-2.855** (0.27)	-1.664** (0.27)
Engagement in home-centred activities		
Ref: Low		
Shared reading - moderate	0.482 (0.47)	0.074 (0.48)
Shared reading - high	0.542 (0.47)	-0.099 (0.49)
Shared creative activities - moderate	-0.241 (0.35)	0.137 (0.33)
Shared creative activities - high	-0.988* (0.39)	-0.209 (0.37)
Shared indoor games - moderate	0.347 (0.31)	-0.106 (0.30)
Shared indoor games - high	-0.151 (0.41)	-0.229 (0.39)
Media usage - moderate	0.097 (0.55)	0.988 (0.72)
Media usage - high	0.427 (0.58)	0.962 (0.75)
Participation in other out-of-school activities		
Commercial-public leisure	0.543** (0.06)	0.109* (0.05)
out-of-school clubs	0.211** (0.04)	0.043 (0.04)
Teacher's assessment at age 5		0.580** (0.01)
Constant	42.374** (0.82)	17.623** (1.21)
N	**7,631**	**6,042**
Student Level Variance	81.91 (1.35)	55.08 (1.02)
Snijders/Bosker R^2 Student Level	0.289	0.364
Ward Level variance	2.45 (0.49)	3.05 (0.50)
Snijders/Bosker R^2 Ward Level	0.153	0.403
VPC (Variance Partition Coefficient)	0.029 (2.9%)	0.052 (5.2%)
-2LL	27720.01	20790.28

Finally, Model 2 in Table 5.11 shows that when the age 5 assessment results are taken into account, no associations are found between academic progress, as perceived by the teacher, and children's level of engagement in home-centred activities. What's more, no significant results were found by interaction models that were fitted to explore whether the strength or direction of the association between engagement in the 4 discussed home activities and change in the assessment scores varies by parental educational level, parental occupational status or the family's income.

Taken together with results from the developmental models in Tables 5.9 and 5.10, the findings in section 5.3.6 provide very little evidence of a relationship between participation in the selected home-centred activities and children's academic progress in the middle childhood years.

5.3.7 Summary: Home-Centred Leisure Activities and Academic Outcomes

The results in section 5.3.6 are summarised and presented in Table 5.11A. These results show, firstly, that there is relatively little connection between the level of engagement in the 4 investigated home-centred activities and 7-year-olds' verbal and non-verbal test scores or the scores given to the students by their teachers. Furthermore, academic progress in the middle childhood years appears to be weakly linked to the level of engagement in the discussed activities. There is also no evidence that children’s SES and their level of engagement in the explored home-centred

activities interact in their relationship with academic development between ages 5 and 7.

Table 5.11A: The associations between participation in home-centred activities and academic outcomes, by socio-economic strata - summary

		Verbal Scores		Non-verbal Scores		Teacher's assessment	
		Age 7	Devel'	Age 7	Devel'	Age 7	Devel'
Shared Reading	Higher/ Intermediate Strata	n.s	n.s	n.s	n.s	n.s	n.s
	Lower Strata		n.s		n.s		n.s
Shared Creative	Higher/ Intermediate Strata	-	-	+	+	-	n.s
	Lower Strata		-		+		n.s
Shared Indoor Play	Higher/ Intermediate Strata	+	+	n.s	n.s	n.s	n.s
	Lower Strata		+		n.s		n.s
Media Usage	Higher/ Intermediate Strata	n.s.	n.s	n.s	n.s	n.s	n.s
	Lower Strata		n.s		n.s		n.s

In particular, section 5.3.6 showed that the frequency of engagement in parent-child shared reading, as well as the extent to which children use electronic media at their leisure, are neither linked to how well children perform nor to their development in relation to the three academic outcomes of interest. Conversely, the analyses of section 5.3.6 demonstrated a positive association between engagement in joint indoor play and children's verbal scores at age 7 as well as positive association with their verbal development between age 5 and 7 . In addition, children's engagement in shared creative activities is linked to lower gain-scores on the verbal test and to higher gain-scores on the non-verbal test.

A comparison of the social-group and the commercial-public OSA on the one hand, and the home-centred leisure activities on the other, reveals that there is a greater number of significant associations between children's

academic outcomes and the two former OSA categories relative to the latter category. This finding indicates that participation in leisure activities outside the home environment is more closely linked to how academically skilled children are, and how well they progress academically between age 5 and 7, than engagement in home-centred activities. Of course, in order to establish this preliminary finding, additional examples of each of the three activity categories should be explored.

A second interesting point which arises from the findings reported in section 5.3.6 relates to the differing academic gains expected from participation in highbrow and lowbrow activities. As has been discussed in section 2.3, engagement in highbrow activities is expected to build up a larger stock of cultural capital than participation in midbrow and lowbrow activities. In turn, large amounts of cultural capital help students to academically outperform counterparts who are equipped with a smaller volume of cultural capital.

Yet, the results from the exploration of the associations between home-centred activities and the cohort children's academic outcomes are more difficult to explain in light of the highbrow-lowbrow distinction. This is because, while there was no increase in the verbal test scores of children who were frequently engaged in shared reading (traditionally considered a highbrow activity), the verbal performance of children at age 7, as well as their verbal development between age 5 and 7, was positively linked to their level of engagement in joint indoor play, a more midbrow leisure activity.

The finding that there is neither a significant main effect of the level of engagement in shared reading on children's academic performance nor an association between this activity form and academic development in the

middle childhood years is inconsistent with former studies into the links between reading and the cognitive outputs of the millennium cohort children (e.g., Becker, 2011; Hansen & Jones, 2010; Hartas, 2011).

There could be several explanations as to why the present study reached different results. Firstly, the current thesis has focused on 7-year-olds' outcomes, while the former studies examined the outputs of younger children. It could be that, at the pre-school years, parental reading is positively linked to the cognitive development of children, but that there is no additional effect of "shared reading" between the ages of 5 and 7. A different reason why the present study, conversely to prior studies, found no associations between shared reading and children's academic outcomes may be that the models fitted in the current study accounted for the effects of a larger number of independent variables, including SES, family characteristics, school type and participation in a wide range of out-of-school activities.

The finding that moderate and high levels of engagement in parent-child joint indoor play are positively linked to the verbal skills of children is also interesting in this context. This is because, as discussed in sections 2.3.3 and 3.4.4, traditionally, joint indoor play will not be regarded as an example of a highbrow activity which could bring significant academic returns to those who engage in it. The results in Table 5.9, however, suggest otherwise. They indicate that engagement of parents and children in joint play may promote the accumulation of cultural capital in children, irrespective of the family's SES. It is possible that such interaction stimulates the child's verbal expression and vocabulary, two skills that are captured by the BAS verbal test. It could also be the case that, throughout such joint play, the use of

games and toys enriches the child's experience and brings him or her academic gains.

The non-significance of the interactions between SES and the level of engagement in joint indoor play is also inconsistent with the cultural reproduction perspective according to which academic returns for cultural capital should be greater for children who grow up in high-SES families than for their counterparts with lower SES.

With regard to electronic media usage, earlier Table 4.6 (p. 245) showed that there is a negative association between SES and the number of hours a day, on average, that 7-year-olds use electronic media. Children's propensity to play on the computer or watch TV for more than 3 hours a day, during term time, decreases with parental occupational status and educational qualifications, and with the family's income. Section 5.3.6 later showed that there is no association between how frequently children use electronic media at their leisure and their academic outcomes. These findings are consistent with the argument presented in sections 2.3.3 and 3.4.4, namely that the usage of electronic media by children can be seen as a lowbrow activity which does not build up cultural capital or bring substantial academic gains. Nevertheless, electronic media usage does not appear to suppress children's academic performance and development in the middle childhood years.

It could be, of course, that there is a difference which is not captured by the present analyses: between the way children engage with electronic media for leisure purposes and for educational purposes. It is possible that a more in-depth exploration of the various uses of electronic media by children would show that these uses differ in their impacts on academic development.

The finding that a high level of engagement in shared creative activities is positively linked to children's non-verbal development and negatively associated with their verbal gain-scores could mean that creative activities are more linked to non-verbal abilities than verbal abilities. It requires additional investigations which are beyond the scope of the present project.

A final point relates to the question of whether engagement in home-centred leisure activities widens, narrows or maintains the socio-economic gap in the academic outcomes of school-age children. The results displayed in section 5.3.6 show that some home-centred activities, but not others, are related to better verbal and non-verbal test scores. In addition, the results shown in Chapter 4 demonstrated that there is fairly little disparity in the level of engagement in home-centred activities among children with different SES. Altogether, this supports the idea that the examined home-centred leisure activities play only a small role, if any, in the reproduction of socio-economic stratification of academic achievement in the middle childhood years.

Thus, the study supports neither the idea that participation in home-centred leisure activities widens the academic performance gap among children from dissimilar SES groups, nor the notion that engagement in such activities narrows this gap. Conversely, the results indicate that social-group and commercial-public OSA, play a more prominent role in reproducing the inequality in academic outcomes of children in different social strata.

5.4 Participation in OSA and the Socio-Economic Gap in Children's Academic Performance: An Integrative Discussion

Chapter 5 has addressed the question of whether participation in leisure OSA, at ages 5 and 7, is associated with children's academic performance at age 7 and their academic development between age 5 and 7. If so, the chapter further asked, is there a variation in the direction and strength of the associations between participation and academic development, by children's SES? Findings from the analyses in this chapter can be broadly summarised as follows:

- Participation in social-group OSA is associated with children's academic performance and development, taking account of their SES, family characteristics, school type and other educational parameters. More specifically, the results show that attendance at enrichment clubs/classes is linked to higher age 7 scores in the three academic measures examined by the study. Attendees at enrichment clubs also exhibit academic improvement between age 5 and 7, on the three academic indicators. Moreover, the positive associations between attendance at enrichment clubs and children's test score gains are of similar magnitude for children across the SES levels. Similarly, participation in PA clubs/classes is linked to better performance of 7-year-olds on the two standardised tests and the teachers' assessment. However, attendance at PA clubs is associated with academic progress only in relation to the verbal and non-verbal standardised test. The non-verbal improvement associated with attendance at PA clubs is comparable for children in both high, intermediate and low SES groups. In the case of the

verbal test, evidence of interaction effects suggests that children from very low-SES families may gain more from attendance at PA clubs than peers who are more socio-economically advantaged. The idea that participation in social-group OSA brings greater academic gains for children who grow up in families with very low SES than for counterparts in intermediate- and higher-SES groups is also demonstrated by the effects of the interactions between SES and attendance at after-school clubs on the verbal and non-verbal test scores. Finally, participation in social-group OSA appears to be more closely linked to children's performance and improvement on the two standardised tests than on the teachers' assessment.

- Participation in commercial-public leisure OSA is also found to be linked to better academic performance at age 7. Participation in some of these leisure OSA is also related to academic progress in the middle childhood years. More specifically, results in this thesis show that 7-year-olds who had been to art venues and cinemas scored higher than peers who had not been exposed to such leisure activities. This is true for the three academic measures, and even when the effects of SES and a range of additional independent variables are taken into consideration. Visits to art venues and cinemas consistently at both sweeps are also related to verbal and non-verbal test score gains between ages 5 and 7, but there is no similar association with the teachers' assessments. Moreover, the predicted improvements associated with visits to art venues are greater relative to visits to the cinema. These improvements are similar in magnitude for all children, irrespective of their SES. Sport spectatorship is related to better performance on the age 7 verbal test as well as on the teacher's assessment. This activity form is also related to verbal score gains in middle childhood, but there are no similar associations

with the non-verbal test or the teacher's assessment. In this category of OSA, interactions were found between SES and attendance, but only in respect to one of the four examined activities. Specifically, the results show that there is an interaction between visits to theme-parks and the verbal gain scores. This interaction lends further support to the idea that children who are raised in severely disadvantageous socio-economic circumstances may benefit more academically from exposure to leisure OSA than those who grow up in higher-SES homes.

- Engagement in home-centred leisure activities is found to be linked to only two out of the four examined activities of this category. In contrast to previous research on the links between reading and cognitive development (e.g., Bromley, 2009; Hansen & Jones, 2010; Hartas, 2011), no significant associations were found between the level of engagement of the parent-child dyad in shared reading and academic performance or development. Similarly, there is no indication that the frequency with which children use electronic media is linked to how well they perform or progress on the three explored academic outcomes. Conversely, engagement in joint indoor play, with one or two of the parents, is positively associated with the cohort members' verbal scores at age 7 and their verbal development between age 5 and 7. The verbal score gains associated with high level of engagement in joint indoor play is similar in magnitude for all children, regardless of their SES. In addition, engagement in shared creative activities is linked to higher non-verbal scores as well as positive progress on the non-verbal test; however, this activity is also negatively associated with the verbal scores and development of children.

The next sections aim to offer a socio-cultural explanation of the above results, drawing on the theoretical framework discussed in Chapter 2 of this thesis.

5.4.1 The Creation of Social Capital in OSA and its Relationship with Children's Academic Outcomes

The idea that participation in out-of-school programmes constitutes social capital can be found in previous research (e.g., Beckett, 2002; Chin & Phillips, 2004; Gamoran et al., 2010; Horne et al., 2011; Huang et al., 2007; Light, 2010; Miller, 2010). Yet, whether social capital enables participants to academically outperform counterparts who don't attend the same OSA, and hence lack equal levels of social capital, is a matter of debate (Gamoran et al., 2010; Morgan & Todd, 2009). Moreover, research into the accumulation of social capital in OSA, and the possible implications of this social capital for the academic development of students, has mainly focused on social-group OSA. Thus, the links between attendance at commercial-public leisure OSA or engagement in home-centred leisure activities and the academic performance and development of children remain relatively unexplored.

As has been discussed in section 2.4 (pp. 54-84), participation in OSA could aid the academic performance of school-age children through various processes associated with increased levels of social capital, including: greater mutual expectations and obligations; more effective enforcement of norms; better information channels (Coleman, 1988, 1994); increased levels of trust and support; more efficient collaboration among people; and a larger number of "bridges" to knowledge and resources otherwise out of reach (Putnam, 1993, 2000).

Participation in the three explored activity categories, however, may lead to the development of different social ties and hence involve the "activation" of dissimilar types of social capital. This is discussed in more detail in what follows.

The Accumulation of Social Capital in Social-Group OSA and Children's Academic Outcomes

Previous research has demonstrated that peer networks of school-age students could produce payoffs which are independent of the benefits parental ties may bring (Leonard, 2005). For example, friendships among students may create a supply of emotional support and advice (Morrow, 2001). Research has also shown that the loss of friendships due to residential mobility is associated with a decline in students' academic achievement (Pribesh & Downey, 1999).

Huang et al. (2007), based on data from nearly 2,300 U.S. students and 400 staff members in out-of-school programmes, asserted that the relationships that occur within these settings construct bonds which might not be formed elsewhere, and "provide students with access to an expanded network of adults and mentors in the community" (p. 2). Bullock et al. (2010, p. 109), who studied the interactions between students and staff in the out-of-school club's environment, noted that, although staff members imposed "disciplinary rules" and could be quite strict, attendees described them as friendly and generally more approachable than the teachers at school.

Based on the above research it could be argued, firstly, that attendance at social-group OSA may involve the creation of new friendships among peers or strengthen already existing relationships of children

relatively close in age. This may give attendees at social-group OSA an available and reliable source of assistance and encouragement. The friendships created in the social-group OSA settings may also provide attendees with access to knowledge and resources not held by individuals in their circle of close friends. For instance, in many cases, participation in social-group OSA creates opportunities to spend time in mixed age groups and to interact with individuals from diverse backgrounds and ability groups (Smith & Barker, 2003).

More specifically, information channels could be built up through interactions with more knowledgeable peers during conversation, play or exercise. This could benefit children by stimulating their academic development and equipping them with greater knowledge. However, it is possible that participation in social-group OSA creates greater opportunity to build up bonding than bridging social capital through developing ties with children from different SES groups. Research into the formation of social capital among adolescents and adults in organised team sports has demonstrated that such activities provided attendees with very few opportunities to establish bridging relationships (Horne et al., 2011; Walseth, 2008).

Secondly, participation in social-group OSA may enable children to develop bonds with staff members such as teachers, play-workers, instructors or coaches. These social connections, as well, may boost the academic outcomes of children that attend OSA compared to those who don't attend similar settings. For example, it could be that the social capital accumulated in social-group OSA, in which children interact with non-familial adults, constitutes obligations and expectations which in turn

strengthen the attendees' commitment to fulfilling academic tasks. It is also possible that the relationships children and staff develop in the social-group OSA setting encourage the students to embrace a more positive perspective on educational institutions.

Moreover, the participant-staff interactions that take place during OSA may reinforce norms (Coleman, 1988, 1994) that could later enable children to perform better on various academic tasks. For instance, children's interaction with play-workers, teachers, coaches, or tutors in the club's environment may include positive reinforcement of behaviours like taking turns or following instructions. These, in turn, could help in academic tasks that require such skills to be utilised. In this context, Bullock et al. (2010) commented that

> This educational relationship nurtured an understanding of responsibilities, authority and on-going learning. Further, it shaped self confidence and an identity as a participator (p. 15).

This may be especially the case for those who attend PA and enrichment clubs/classes, which, as has been suggested in sections 4.3.1-4.3.2 (pp. 181-222), offer participants a more structured environment with more adult guidance and supervision. Wikeley et al. (2007), in this context, distinguished between single-activity clubs offering a particular activity such as sport or drama, and clubs in which a selection of activities is on offer. They suggested that, in single-activity clubs, staff members are perceived by attendees as role models with specialist knowledge and expertise and act as catalysts for the activities. In comparison, in the multi-focused clubs, staff

members undertake a supervisory role and "provide a framework within which the young people could themselves explore different social context" (p. 14).

The opportunity to develop trusting relationships with staff educationalists within these settings may also provide participants with a source of emotional support that might constitute a safety net for children who experience difficulties and, consequently, guard them against academic deterioration. Huang et al. (2007) stated in this regard that:

> Trust is an important psychological element that strengthens relationships, which in turn helps students develop the values and attitudes necessary to persist in their education (p. 5).

Finally, children's attendance at social-group OSA could also lead to the formation of a specific kind of social capital termed by Coleman (1988, 1994) "intergenerational closure", consisting, that is, of interactions among parents of children coming from different families. These types of relationships, in addition to parent-staff interactions, may generate academic gains for children: for example, by providing parents with access to information concerning various school matters or cultural activities that take place in the community and which their child may benefit from attending.

The Accumulation of Social Capital by Engagement in Leisure Activities in the Home Environment and in Public Spaces, and Children's Academic Outcomes

There could be important differences in the social capital children accumulate by participation in social-group OSA and the social capital

collected through their exposure to commercial-public OSA or engagement in home-centred activities.

As discussed in the previous section, the social relationships children engage in during their participation in out-of-school clubs and classes include, primarily, interactions with non-familial figures, both peers and adults. Attendance at out-of-school clubs/classes may also establish integenerational closure.

In contrast, participation in commercial-public OSA is likely to involve primarily the company of family members or time spent with a small group of close friends. In this type of activity, the interactions with non-familial members, or with people who are not part of the child's and parents' immediate network, would generally be of a sporadic nature. This is despite the fact that activities in the commercial-public category typically accommodate a large number of participants. Similarily, engagement in home-centred leisure activities concern interactions that take place among the members of the nuclear family.

This means that participation in both commercial-public OSA and home-centred activities increases the level of "closure" and bonding social capital within the family. The accumulation of these types of social capital could bring academic gains for children through various pathways.

For example, children's exposure to parental educational expectations and aspirations may be more frequent in families with high "closure" than in families with looser ties. In this respect, research has shown that, irrespective of SES, the vast majority of parents agree that it is important to encourage children to attend school regularly and succeed in school, and that school attendance helps in acquiring life skills and improves the chances

of getting ahead in life (e.g., Bradshaw et al., 2012; Dalziel & Henthorne, 2005). So, it is possible that the positive associations between academic performance and attendance at commercial-public OSA are mediated not only by exposure to the various contents of the settings, but also by the intergenerational transmission of educational values and perceptions from parents to children, which emphasise the importance of academic success.

Yet, results from the home-centred category lend only partial support to this idea because they show that, in some cases, there are non-significant or even negative associations between the level of engagement in shared activities within the home and children's academic performance. It is possible that both the level of closure and the type of activity in which children take part play a role in supporting school-age students' academic development. Also, it could be that attendance at commercial-public OSA, by contrast with engagement in home-centred activities, gives parents and children the opportunity to form weak bridging ties with members of the wider community, through which they may gain access to knowledge and resources otherwise out of reach. There is a need for additional research which will explore these ideas further.

The results of Chapter 5 suggest that participation in commercial-public OSA, compared to engagement in home-centred activities, may equip parents with a greater volume of "credit slips" (Coleman 1994, p. 313) that could be used to promote their children's academic outcomes. They also indicate that participation in commercial-public OSA is more strongly linked to improved academic performance of 7-year-olds than engagement in home-centred activities. This possibilty, too, requires further investigation.

5.4.2 The Effect of Concerted Cultivation on School-Age Children's Academic Outcomes

It has been suggested that participation of children in organised, adult-led OSA, is among the various manifestations of a concerted cultivation childrearing practice, while children's engagement in self-led play represents a natural growth childrearing logic (Lareau, 2002, 2003; Vincent & Ball, 2007; Vincent et al., 2013). This vein of research showed that concerted cultivation is more prevalent in high-SES families, while the natural growth strategy tends to characterise the childrearing practice adopted by parents with lower SES.

But, besides offering a framework through which the disparity in engagement of members from different SES groups in leisure OSA could be understood, the concept of concerted cultivation can help in explaining the positive links between participation in leisure OSA and children's academic outcomes.

For example, it could be argued that children who grow up in concerted cultivation-oriented families, more than peers in natural growth-oriented families, are provided with more opportunities to develop "the cognitive skills necessary to get the job done" (Farkas, 2003, p. 541). The adult supervision and guidance that the former group of children experience during their out-of-school free time may boost the development of skills such as ability to follow rules and procedures, to conform to external authority, and to practise self-discipline, in addition to an emerging sense of entitlement (Lareau, 2003). In turn, these skills and this positive self-concept could translate into efficient academic work habits and result in academic

success for those who are exposed to the concerted cultivation childrearing strategy. Indeed, US research has documented positive associations between participation in out-of-school programmes and non-cognitive skills such as work habits and task persistence (Taylor, LoSciuto, Fox, & Hilbert, 1999), self-esteem and self-confidence (Durlak & Weissberg, 2007).

This explanation may also shed light on the finding that participation in organised OSA, both social-group and commercial-public, seems to be more closely linked to improved academic outcomes in children than engagement in home-centred activities. It may be that attendance at social-group and commercial-public OSA, more than engagement in leisure activities in the home environment, provides children with opportunities to develop the skills which result in better academic work habits.

Similarly, it could be that participation in enrichment clubs as well as visits to art venues and the cinema, to a greater extent than participation in after-school clubs or attendance at sport events and theme-parks, allow children to develop the skills mentioned above and therefore to succeed academically. This is in addition to the possibility that such highbrow activities build up greater cultural capital which, in turn, brings rewards within educational settings.

Of course, more research in this vein is needed to further the understanding of the acquisition of particular non-cognitive skills through participation in OSA.

A different manifestation of concerted cultivation, which might mediate the positive associations between participation in OSA and academic outcomes of school-age children, relates to the use of spoken language. Lareau (2003) stressed that the concerted cultivation childrearing

approach involves extended negotiations between parents and their children as well as the use of reasoning and encouraging the child to contest the parents' statements and present questions. Thus, according to Lareau, spoken language is an important mechanism of intergenerational transfer of academic advantages from parents to children, not only because these verbal interactions with the parents help children to develop higher levels of efficacy, but also because such language use is more highly rewarded in educational settings.

There is little indication within this thesis that parents' and children's engagement in shared leisure activities at home is linked to better academic performance in children or to greater academic progress in the middle childhood. Nevertheless, the study does demonstrate a positive association between the level of engagement in shared indoor play and the children's verbal scores, a finding which lends some support to the idea that extensive interactions between parents and children may promote the child's language use and lead to better academic outcomes. The positive associations between attendance at commercial-public OSA and children's test scores can also be interpreted in light of this idea: it could be that children who engage in commercial-public OSA have a greater opportunity to develop their linguistic skills, which in turn may translate into academic success.

5.4.3 Participation in OSA and the Reproduction vs. Mobility Argument

The previous section discussed several mechanisms associated with both social and cultural capital, which might mediate the associations between participation in OSA and academic performance and development.

However, a question remains as to whether participation in such activities reproduces or reduces the socio-economic gap in the academic outcomes of school-age children.

The scholarship on both social and cultural capital offers conflicting hypotheses regarding the effects of the capitals accumulated through participation in OSA on the academic gap of children from dissimilar SES groups.

Scholars have suggested that the accumulation of large stocks of social capital (Coleman, 1988, 1994) and cultural capital (Andersen & Jaeger, 2013; DiMaggio, 1982) is beneficial for students at all levels of SES. The different manifestations of social capital – namely, information channels, effective norms, trust and support, and greater mutual obligations and expectations - have equally positive implications for the academic development of all children, irrespective of their SES.

This perspective implies that the academic returns on attendance at OSA should be similar in magnitude for children in low- and high-SES groups. Morover, the accumulation of social and clutural capital through attendance at OSA by children in low-SES groups could lead to social mobility by compensating for the "losses" these children experience due to the lack of other forms of capital (i.e. economic, symbolic).

However, others have argued that the accumulation of social capital (Bourdieu, 1984) and cultural capital (Bourdieu, 1984; Lamont & Lareau, 1988; Lareau, 2003) is dependent on individuals' position in the social hierarchy. Participation in OSA, thus, is expected to create greater academic gains for students from higher-SES families than for lower-SES students. This is because the former group of students, much more than the latter, can gain

access to valuable symbolic and materialistic resources through participation in OSA. In turn, these resources may boost their academic success. Therefore, according to this approach, participation in OSA reproduces and even increases the academic dominance of higher-SES groups. For example, because parents with higher SES tend more frequently to use language in a way that promotes academic development, increased levels of engagement in shared leisure activities in the home are expected to create greater academic gains for higher-SES children.

The evidence presented in Chapter 5 lends some support to the social mobility perspective: in a few cases, the academic returns on participation in OSA are greater for children in lower-SES groups than for peers in higher-SES groups. This is evident in the interactions between attendance at after-school clubs and SES on children's verbal and non-verbal gain-scores, as well as the interactions found between SES and attendance at PA clubs (on the verbal test), and visits to theme-parks (on the verbal test).

Moreover, the findings are inconsistent with the reproduction argument because they indicate that the social and cultural capital children accumulate by participation in OSA bring academic benefits of equal magnitude to children in high- and low-SES groups. There is no indication, as suggested by the reproduction argument, that the returns on participation in OSA are greater for children who grow up in higher-SES families.

This conclusion suggests that the social and cultural capital built up through participation in OSA, and the academic benefits they bring, may be more valuable to children in lower-SES groups than to counterparts in higher-SES groups.

5.4.4 Summary

The results of Chapter 5 indicate that participation in most (but not all) of the explored OSA is significantly associated with school-age children's academic performance, independent of the effects of SES, family characteristics, school type, absenteeism and prior skills. Furthermore, There are relationships between participation in these OSA and children's academic development in the middle childhood years. Yet, there is also a considerable disparity in the test scores of children in high- and low-SES groups, which is evident for all three outcomes. This socio-economic inequality in academic performance and development remains after accounting for whether or not children attend OSA.

The links between participation in leisure OSA and children's academic performance and development are more evident in the social-group OSA category and the commercial-public OSA category than in the home-centred category. Moreover, the connection between participation in leisure OSA and children's academic performance and development seems stronger for the verbal outcome and weaker for the teachers' assessment.

Explanations as to why the academic outcomes of children are positively associated with participation in OSA draw upon the theory of social and cultural capital. These theories also help in understanding the between- and within-category differences in the relationships between participation in OSA and children's academic outcomes.

For example, I suggested that participation in social-group and commercial-public OSA may be more strongly linked to improved academic test scores because these activities, more than home-centred activities, allow

children to develop skills such as the ability to follow rules and procedures, to conform to external authority, and to practise self-discipline, which help them to succeed in academic tasks. It is also possible that engagement in activities that fall into the two former categories provide participants and parents with bridging social capital, on top of strengthening already existing bonding social capital. The bridging ties could aid the academic development of children both directly, by exposing them to new knowledge, or indirectly, through equipping the parents with greater information that can then be utilised to make informed educational choices and decisions.

Finally, a conclusion has been reached that the results of this study support the mobility argument rather than the reproduction hypothesis: the academic gains of children in lower-SES groups are equal to or even greater than those of children in higher-SES groups.

Nevertheless, the implications of these findings for the socio-economic gap in children's academic achievement are less straightforward. On the one hand, the results of Chapter 5 indicate that participation in OSA may help in narrowing this gap. On the other hand, results presented earlier in Chapter 4 show a considerable SES inequality in participation in OSA. Taken together, therefore, the findings of this study indicate that children who grow up in higher-SES families are more likely than lower-SES counterparts to participate in OSA and therefore also have a better chance of experiencing the benefits associated with participation in such activities. So, without increasing the participation rates of children from families with lower SES in OSA, the achievement gap is unlikely to be reduced.

PART 3 -

General Discussion and Conclusions

Chapter 6 – General Discussion

6.1 Introduction

To date, there is little UK-based research that has looked in detail at the socio-economic disparity in school-age children's participation in a range of leisure OSA and the connection between this disparity and their academic performance and academic development. This is among the reasons why the implications of inequities in leisure participation for the reproduction of gaps in the academic achievement of school-age children who grow up in families with dissimilar SES are imperfectly understood.

Therefore, the purpose of this thesis was, firstly, to provide robust empirical evidence as to the associations between participation in various leisure OSA, SES, and children's academic outcomes; and secondly, to offer an explanation of the processes through which participation in leisure OSA might mediate the socio-economic gap in academic achievement in middle childhood.

This was achieved through the analysis of representative data taken from two sweeps of the Millennium Cohort Study, a current large-scale birth cohort survey of British children and their families. The analysis was undertaken in a multilevel framework. The results were contrasted with previous research findings and interpreted using various concepts drawn from the theories of social and cultural capital.

6.2 Synthesis of Findings on Participation in OSA and the Socio-Economic Gap in the Academic Outcomes of School-age Children

This thesis has presented an investigation into whether or not British children's participation in three leisure categories, namely social-group OSA, commercial-public OSA, and home-centred activities, is stratified by SES (research question 1). And if so, the thesis asks, what are the independent ("net") effects of stratification in leisure participation on the academic performance and development of children who grow up in families with different levels of SES (research questions 2 and 3)? In the process, the thesis has examined the implications of inequality in participation in the three investigated leisure domains for the socio-economic gap in the academic achievement of 7-year-olds in Great Britain.

In short, the analysis presented in the preceding chapters shows, firstly, that the Millennium Cohort children's participation in all three categories of leisure activities, that is, social-group OSA, commercial-public OSA, and home-centred activities, does vary depending on their parental educational level, parental occupational status and the family's income. These results are statistically significant even when various family indicators are taken into account. Among the three SES indicators, parental education and incomes have stronger independent associations with participation than social class.

The analyses in this thesis, secondly, demonstrate that participation in some, but not all of the examined activities is significantly associated with children's academic performance and development. Mostly, these effects are positive, meaning that engagement in the respective activities is linked to improved academic outcomes. Among the three academic measures used in

this research, verbal performance is most strongly linked to participation in OSA, while the associations between participation and children's non-verbal scores and the teacher's assessment are modest in magnitude.

Lastly, the analysis demonstrates that participation in leisure OSA explains a small portion of the socio-economic variation in children's academic performance and development, and this finding is true in all three domains. This means that, while to some extent participation in the explored OSA helps in understanding the socio-economic gap in children's academic outcomes, clearly there are other factors that affect this gap.

Underlying these overall conclusions, however, several further points are worthy of note. These are discussed in what follows.

6.2.1 The Socio-Economic Disparity in Children's Participation in OSA

Participation in OSA as a Manifestation of SES-based Childrearing Practices

The thesis demonstrates that there is a monotonically increasing relationship between the likelihood of participation in the discussed leisure activities, or being highly engaged in these activities, and children's SES. Furthermore, the results indicate that the associations between SES and participation in OSA are somewhat stronger for highbrow-midbrow activities than for lowbrow activities, and for skill-building activities than for childcare and free play activities. For example, from Tables 4.4-4.5 (pp. 210, 227) it can be seen that the positive associations between SES and

participation in OSA are stronger for visits to art venues and engagement in shared reading, two examples of highbrow leisure activities, than for visits to theme-parks or engagement in joint indoor play, which denote more lowbrow activities. From Tables 4.1-4.2 (pp. 185, 194) it can be seen that participation in after-school clubs, which provide a loosely structured childcare-oriented environment, are less strongly linked to SES than attendance at PA clubs, in which the emphasis is typically on more structured skill-building activities.

These findings lend support to Lareau's (2003) argument that socio-economic disparity in children's engagement in extracurricular activities stems from differences in the childrearing practices that parents in different social classes adopt. Consistent with this perspective and with other research in that vein (e.g., Bodovski & Farkas, 2008; Bodovski, 2013; Henderson, 2013; Lareau & Cox, 2011; Vincent & Ball, 2007; Vincent et al., 2013), the results of the present study support the idea that parents with high SES employ a "concerted cultivation" childrearing practice to a greater extent than lower-SES parents. The concerted cultivation upbringing strategy is manifested by deliberate and constant attempts of the parents to foster their children's skills and talents. This aim is pursued by organising the child's daily life and free time; intervening in educational institutions on behalf of the child; and encouraging the child to use reasoning, pose questions and negotiate his or her ideas (Lareau, 2003).

The "concerted cultivation" childrearing practice is used by high-SES parents because they perceive the childhood period as a complex developmental project which must be closely and carefully monitored by the child's main carers. This approach is in contrast to the logic of natural growth

according to which children can develop and flourish as long as their physical needs are fulfilled, and which requires less frequent interventions for the purpose of orchestrating the children's free time (Lareau, 2003).

One major manifestation of the high-SES parents' concerted cultivation strategy, according to Lareau (2003), is intensive involvement in organising and overseeing the child's free time to ensure that it is invested appropriately. This strategy includes encouraging the child to engage in organised/structured out-of-school activities, which are seen as providing an opportunity to develop, exercise and exhibit his or her unique talents. As has been suggested by Vincent and Ball (2007), the purpose of this early cultivation through participation is to allow the child to develop a middle-class habitus and start to establish "the foundations of a cultural breadth" (p. 1068). In fact, Vincent et al. (2013) proposed that investment in OSA is perceived as a taken-for-granted action and a manifestation of good middle-class parenting.

The results in this thesis show that children with high-SES parents are indeed much more likely to attend OSA. This is especially true for highbrow and skill-building leisure activities which could help to equip the child with a class-appropriate repertoire of cultural experiences, in addition to boosting his or her unique skills.

However, the results presented in this thesis extend Lareau's work. While Lareau concentrated primarily on exploring high-SES parents' involvement in children's attendance at social-group activities outside the home, the current thesis shows that the concerted cultivation practice is also concerned with greater engagement in parent-child shared home-centred

activities, as well as with participation in commercial leisure pursuits which take place in public spaces.

That said, the results do show that the links between SES and participation in OSA are stronger for activities taking place outside the home environment than for activities within the family. So, the present research indicates that the concerted cultivation practice of high-SES parents is manifested by extensive engagement in shared activities within the family, but even more so by heavy involvement in managing the child's attendance at OSA outside the home environment. This finding challenges Bourdieu's classical argument that the accumulation of cultural capital in the childhood years takes place primarily within the family.

However, care must be taken when interpreting the meaning of this study's findings as a reflection of class-based childrearing practices. While this interpretation is justified theoretically, other explanations can be given for the evident socio-economic disparity in children's attendance at OSA. It could be that the parents with high and low SES exhibit different levels of concerted cultivation, not because they hold dissimilar perceptions as to the role of parents or the importance of OSA, but because of perceived or concrete constraints that they face.

For example, it could be that the barriers to participation encountered by parents and children of lower SES are greater than those experienced by higher-SES families. Such barriers can be the result of a limited budget, lack of information on what's available, or other reasons. As Reay and Lucey (2003) suggested, educational decisions may often reflect class constraints rather than free choice.

Hitherto, this thesis has suggested that the higher levels of participation of children from high-SES families in OSA represent the high-SES parents' greater tendency to use a concerted cultivation childrearing strategy which includes extensive involvement in managing their children's participation in leisure OSA within the family and outside the home environment. A question remains, however, as to the nature of stratification in children's participation in OSA resulting from the differing levels of concerted cultivation used by parents in high- and low-SES groups. In other words: what could be learnt from the results of this thesis on the relationship between SES and culture?

Based on the findings presented in this thesis, I argue that the SES stratification in children's attendance at leisure OSA corresponds to Peterson's (1992) omnivore-univore distinction. Children's propensity to participate in the activities in question rises with parental educational level, parental occupational status and the family's income. But this is true not only for participation in highbrow activities such as attendance at enrichment clubs, visits to art venues and parent-child shared reading. Instead, higher-SES children are also overrepresented in more midbrow-lowbrow activities such as attendance at after-school clubs, going to the movies, visits to theme-parks, and parent-child joint indoor play. In contrast, children who grow up in lower-SES families are less likely to attend the respective activities, meaning that they are at risk of developing a univore pattern of participation in leisure OSA.

Furthermore, the empirical findings of the thesis illustrate that the omnivorous pattern that characterises children from high-SES families crosses the three investigated leisure categories: it is evident in social-group and commercial-public OSA, and to a smaller degree also in home-centred activities. Again, this conclusion lends weight to the idea that, in the middle childhood years, public spaces constitute the primary arena in which cultural capital is accumulated, whereas the home environment is a secondary sphere for its formation.

But, to some extent, the Bourdieunian (1984) "structural homology" argument as to the relationship between class and culture is also supported by the empirical findings of this thesis. The "structural homology" idea proposes that there is a link between the position of individuals within the hierarchical social order and the types of cultural forms they "consume" and participate in: while members in the upper- and middle-class groups opt for highbrow activities and genres and avoid lowbrow cultural forms, the opposite takes place among working-class counterparts.

As can be seen from the tables in Chapter 4, the associations between SES and attendance at OSA are stronger for highbrow activities than for lowbrow activities. There is also some indication that children in higher-SES groups are less likely to spend a large portion of their free time using electronic media – an activity which, in the present research, denotes a lower level of cultural capital. These trends of engagement vs. avoidance mean that, although children from families with high SES are overrepresented in nearly all the activities, the SES disparity is even larger for activities traditionally characterised as highbrow.

So, on the one hand, the results show that there is no apparent highbrow exclusivity in higher-SES children's participation in OSA: children in high-SES groups exhibit cultural omnivorousness because they participate in a greater number of activities from across the highbrow-lowbrow spectrum, compared to lower-SES children. But, on the other hand, parents and children in higher-SES groups seem to favour highbrow activities over lowbrow alternatives.

Taken together, these findings indicate that school-age children who are more socio-economically advantaged experience a wider range of leisure activities than peers who grow up in socio-economically disadvantaged circumstances. Nevertheless, it would seem that, in the upbringing of the socio-economically advantaged children, a focal point is the introduction of the child to highbrow activities. The implications of this combination for children belonging to higher-SES groups may be twofold. First, the emergence of eclectic taste occurs alongside appreciation of highbrow cultural forms. Second, the development of cultural knowledge is comprised of both horizontal and vertical axes. A broad horizontal axis is created by the omnivore's engagement in a wide range of activities, with a narrower vertical axis comprised of more in-depth familiarity with highbrow activities.

A note on the Geographical Variation in Children's Participation in Leisure Activities

The multilevel models used in this thesis estimated the degree to which variation in children's attendance at the leisure activities of interest is attributable to locality factors rather than to their SES or family features. One conclusion of this thesis is that there is generally a very small variation

across geographical localities in the rate of children's attendance at the various OSA examined (estimated as equal to 1.8%-5.2%). As might be expected, the locality disparity in attendance at social-group and commercial-public OSA, which depends on the provision of programmes and availability of adequate facilities, is somewhat larger than the variation in the level of engagement in home-centred activities. Nevertheless, even when a geographical difference in the percentage of children attending social-group and commercial-public OSA was evident, as in the case of participation in PA clubs, visits to art venues or going to the movies, this variation diminished considerably once SES indicators were introduced. This finding suggests that the evidenced locality difference is largely due to individuals' SES.

On the one hand, these results are good news because they show that children in different wards have more or less similar opportunities to attend the examined activities. On the other hand, the results are bad news as they show that, even though the different localities in which children reside do not hinder their likelihood of participation in OSA, being raised in families with low SES does.

However, this is not to say that there are no important geographical differences in the attendance rates of children at leisure OSA. Rather, it could be that such variation exists across smaller geographical divisions such as neighbourhoods. In addition, it could be that the disparity across localities in the rates of children attending OSA is affected by individual-level characteristics that were not explored in this research, including ethnicity or the age of the parents. This remains an area which requires further investigation.

6.2.2 The Relationship Between Participation in OSA and School-age Children's Academic Outcomes

Cultural Capital as an Explanation of Why Children from Low-SES Families Benefit from Participation in a Wider Range of OSA

Findings in this thesis indicate that, irrespective of their SES, children who attend OSA display better academic performance and academic development compared to peers who do not have similar experiences. In 9 out of the 11 investigated activities, there are associations between participation in the respective activity and the child's academic performance at age 7, accounting for SES, family features, school type and absenteeism. In most cases, these associations are positive, implying that exposure to the respective activity is related to higher scores on one or more of the age 7 tests. Furthermore, these 9 OSA are linked to changes in the cohort members' test scores between ages 5 and 7, on one or more of the examined tests. In the majority of cases, the change associated with ongoing participation in OSA in the middle childhood years means improvement in the cohort members' scores.

However, the findings also suggest that children in lower-SES groups benefit from a wider range of leisure activities compared to children who grow up in higher-SES families. More specifically, results presented in Figures 5.3-5.10 indicate that, in some cases, participation in OSA is linked to text score gains only in children from lower-SES groups. For instance, attendance at after-school clubs is positively associated with the verbal gain-scores of children of parents with no formal qualifications and those who live in households that fall into the bottom income quartile, in contrast to other

categories of parental education and familial incomes. Amongst children in intermediate-high groups, the verbal score remains stable irrespective of whether or not they attend such clubs. Similar results are demonstrated in relation to participation in PA clubs and visits to theme-parks and funfairs: for children in higher SES groups, the predicted improvement on the verbal test is either not significant or lower relative to the improvement of peers from very low SES groups. There is also some evidence that the non-verbal score gains associated with attendance at after-school clubs as well as visits to theme-parks and funfairs differ by SES. Here, again, greater improvement is predicted for children in very low SES groups compared to peers who are more socio-economically advantaged.

These results lend some support to DiMaggio's (1982) social mobility perspective. The finding indicates that the academic returns on participation in leisure OSA are either equal or higher for children in lower-SES groups, compared to the returns for peers from higher-SES families. Clearly, these are results that challenge Bourdieu's (1984) cultural reproduction hypothesis, according to which children in higher-SES groups are expected to gain more from participation in leisure OSA than counterparts who live in lower-SES homes. According to Bourdieu's theory, this is because participation in OSA accredits that former group of children, but less so the latter ones, with cultural capital which in turn helps them to succeed academically. This capital includes not only the knowledge that is dominant in the educational establishment and associated academic tasks, but also the attitudes, preferences and behaviours that lead to academic success.

There is an interesting point worthy of note in this context. This is that, while children in lower-SES groups seem to benefit academically from

attendance at leisure activities from across the whole highbrow-lowbrow spectrum, the academic performance of peers from higher-SES families is associated with highbrow and midbrow activities, but not (or less) with lowbrow activities.

It may be that, because children in lower-SES groups, compared to peers from higher-SES families, experience a more severe cultural capital deficit, exposure to any kind of leisure activities helps in equipping them with the beneficial outcomes traditionally associated only with highbrow cultural activities.

Social Capital - A Mechanism that Advances the Academic Outcomes of Attendees at OSA

A key purpose of this thesis was to offer a theoretical explanation of the positive associations between participation in leisure OSA and the academic performance and development of children. Above, this objective was met by introducing the theory of cultural capital. Here, I follow previous research (Bourdieu, 1986; Coleman, 1988, 1994; Putnam, 1993, 1995, 2000) to provide an additional explanation of the link between OSA and academic outcomes. In particular, I argue that participation in OSA helps children to accumulate greater stocks of social capital which in turn boosts their academic outputs.

Participation in OSA generates greater social capital because it involves interactions among both peers and adults. Attendance at social-group OSA has the potential to create a range of social ties, including bonding ties with already known figures and bridging ties with members of the wider community. Participation in social-group OSA can involve

interactions among peers relatively close in age as well as between children and staff. Also, participation in social-group OSA may constitute connections between parents and staff or among parents of different children, that is, "intergenerational closure" (Coleman, 1988, 1994). Conversely, engagement in commercial-public OSA and home-centred activities is likely to build up the stores of bonding social capital within the family, although activities in the former category may also involve connections with close friends or even sporadic interaction with members of the wider community.

These greater stocks of social capital may aid the academic outcomes of children through various mechanisms. For example, participation in social-group OSA, and to some degree in commercial-public OSA too, may generate information channels through which parents could obtain knowledge relevant to their child's academic development. This may include obtaining information about educational programmes available in the community or raising awareness as regards the subjects learnt at school through chatting with other parents of same-age children. Or, it could be that extended information channels simply equip the child with greater general knowledge which may lead to a competitive advantage over peers with access to a more limited scope of knowledge. This could occur through interaction with adults as well as with more knowledgeable peers.

In addition, participation in OSA, within the family and in public spaces, may constitute opportunities for children to practice normative behaviours as well as for parents and educationalists to reward children who display such behaviours. This process may help the child to internalise the educational expectations held by adult figures in his or her surroundings, and master the range of behaviours seen as acceptable.

The finding that the participation in OSA is linked to equal or even better gains for children in lower-SES groups when compared to peers in higher-SES families supports the social mobility approach and contradicts Bourdieu's approach to social capital. According to Bourdieu (1984, 1986), social capital accumulates to a greater degree in networks of members with high SES than in networks comprised of individuals with low SES. Essentially, this means that participation in OSA exposes children from high-SES groups (directly or indirectly, through their parents) to favourable symbolic and concrete resources that peers from lower-SES groups who attend OSA are less likely to meet. Clearly, the present research finds no indication that this is indeed the case; hence it challenges the perception that the social capital created within networks of higher-SES members generates better developmental outcomes for children.

The present study, however, lends some support to Putnam's (2000) notion that, even though bonding relations entail benefits, bridging ties provide a wider range of resources and greater opportunity for development. The findings show that, in the middle childhood years, participation in activities outside the home environment, in which children and their parents may establish inter-group contacts, is associated with greater academic gains than participation in home-centred activities.

The Implications of Participation in OSA for the Socio-Economic Gap in Children's Academic Performance

The analyses in this thesis show that, potentially, participation in OSA may help to mitigate the socio-economic gap in children's academic performance. This is because not only does participation have positive

connection to the academic outputs of children, but also the developmental gains associated with participation in such activities for children who grow up in low-SES families are equal to or even greater than the gains for their counterparts in higher-SES groups.

However, the thesis also demonstrates a considerable socio-economic inequality in the likelihood of attendance at OSA: the chances of children participating in the discussed activities increases with parental occupational status and educational level, and with the family's income.

This means that, while children in high- and low-SES groups may both benefit from attending various OSA, children in the latter group have significantly lower chances of engaging in these activities.

So, instead of reducing the socio-economic gap in academic outcomes in the middle childhood years, participation in OSA may in fact become one of the sources of this gap's maintenance.

6.3 Implications of the Findings

The above conclusions regarding the links between participation in OSA and the reproduction of the socio-economic gap in academic outcomes of British children have direct policy implications.

As has been detailed throughout the thesis, in the past two decades, the British government and devolved Scottish parliament have repeatedly expressed commitment to "breaking the cycle of disadvantage" suffered by children who grow up in socio-economically disadvantaged circumstances (British Government, 2012, p. 18). To this end, heavy investments were made, and many programmes were created, to increase low-SES children's

opportunity to attend high-quality childcare (British Government, 1998), participate in various OSA (Chamberlain et al., 2008), and engage in home-centred activities with their parents (Ranson & Rutledge, 2005). The rationale underlying these policy interventions was, and still is, to allow all British children to experience "the best start in life" and to flourish socially, emotionally, physically and academically (British Government, 1998, p. 5, 2005, p. 9; Scottish Executive, 2003, pp. 90–91).

It is possible to identify several distinct ways in which the findings of the current research may inform policy-making.

- The study indicates that, while there is a socio-economic inequality in children's participation in the three explored categories of leisure activities, this disparity may be greater for social-group and commercial-public OSA than for home-centred activities. This finding suggests that policy initiatives may be directed particularly to reducing the socio-economic attendance gap in the two former categories of OSA, rather than to interventions in the activities undertaken in the home environment. Of course, this is not to say that family learning programmes should be abolished: firstly, because the involvement of parents in shared leisure activities within the family seem to also vary by SES; and secondly, because such programmes could aid in raising parents' and children's awareness and knowledge of available out-of-home leisure activities.

- With regard to social-group OSA, the finding that there is little SES disparity in participation in after-school clubs compared to participation in out-of-school enrichment and PA/sport clubs and classes suggests that it may be time to direct particular focus towards the two latter types of clubs/classes. This will not be a simple task: narrowing the evident social

inequality in participation in such activities is likely to require breaking down various subjective and objective barriers.

For example, there is an indication that the costs of participation hinder that of children belonging to low-SES families (Earle, 2009; Larner et al., 1999; Parsad et al., 2009; Smith et al., 2012; Wikeley et al., 2007), but introducing concession entry fees may not be sufficient to combat the economic constraints faced by families of limited means. This is because participation in PA and enrichment clubs typically involves additional costs, including play equipment, uniforms or transportation to and from training, performances and competitions. These costs may impose additional obstacles for families who experience economic hardship.

Barriers to participation could also stem from the lack of information about the availability of programmes or limited knowledge of the nature and structure of the OSA on offer. Thus, enhancing access to information on available OSA and the benefits these activities can bring may be beneficial.

But, even if the two conditions above are satisfied, children in lower-SES groups may refrain from attending social-group OSA if they feel they do not "fit in", or may drop out of such activities if they fail to develop a sense of belonging (Reay, 2004b; Wikeley et al., 2007). This may occur because of a weak connection between the child's previous cultural experiences and the OSA setting, or due to lack of sufficient social ties within the setting: boys and girls may be uninterested in attending programmes that none of their friends go to.

- As has been mentioned above, there is also a considerable socio-economic gap in children's engagement in commercial-public OSA, meaning that there are domains in society that children in lower-SES groups are less

exposed to than children in higher-SES groups. As is the case with social-group OSA, barriers to participation in commercial-public OSA could stem from various sources. Hence, interventions may be required to increase the affordability and availability of such opportunities for children in lower-SES groups.

6.4 Limitations and Recommendations for Future Research

6.4.1 Introduction

The investigation presented in this thesis goes a long way towards addressing the issue of whether or not participation in a range of leisure OSA is linked to children's SES, and what the implications of inequality in participation in such activities are for the socio-economic gap in children's academic performance. Nonetheless, it is possible to identify a number of limitations in the present research which might be addressed in future studies.

6.4.2 Children and the "Homology" vs. "Omnivore-Univore" Hypotheses Debate

A strength of this study is that it has made an innovative endeavour to contrast Peterson's (1992) "omnivore-univore" argument on the link between social class and cultural stratification with Bourdieu's (1984) traditional "homology" standpoint, while concentrating on a sample of school-age children. But, rather than ending this theoretical dispute, the

exploration presented in this thesis aimed at providing a stimulus for future research into children's cultural participation and the "omnivore-univore" vs. "homology" hypotheses debate.

Future studies might therefore wish to use refined indicators to explore whether children's cultural participation/consumption conforms to either the "omnivore-univore" or "homology" hypothesis. Following previous works on adults (Chan & Goldthorpe, 2005, 2006, 2007b; Lopez-Sintas & Garcia-Alvarez, 1999), in addition, future research may employ statistical techniques other than those used in the current research, including latent class analysis which could prove useful in examining whether, within a sample of children, there is indication of grouping based on like patterns of participation/consumption.

6.4.3 The Various Aspects of Concerted Cultivation

This thesis has built upon Lareau's (2003) conceptualisation of the process of intergenerational transmission of cultural capital from parents to offspring in the childhood years. It should be noted, however, that Lareau's framework of cultural reproduction analysis refers to three mechanisms: interventions in institutions, family linguistic patterns, and the organisation of leisure time. The present study has focused on the former aspect. Future research into the formation of cultural capital in children may be carried out to explore the other two mechanisms described by Lareau.

In addition, Lareau's (2003) work is characterised by a dichotomisation of the childrearing practices exhibited by parents in high-

and low-SES groups into either concerted cultivation or the accomplishment of natural growth, correspondingly. The present study, however, referred to these two ideal types of parenting strategies as ends of a single scale. A more rigorous test of the position of families with different SES on this scale, by the three childrearing aspects noted above, is an interesting avenue for future research.

6.4.4 Social Capital Formation in OSA

In this thesis, the concept of social capital served as a useful heuristic in explaining how participation in OSA may benefit children's academic performance and development. The thesis has adopted a point of view within which a child's engagement in leisure OSA, and attendance at social-group OSA in particular, builds up his/her social capital through providing greater opportunities to interact with peers, family members and non-familial adults.

The analysis, however, leaves unsolved the question of whether participation in OSA creates bonding relationships, bridging ties, or both, and whether there is an interaction between SES and participation in OSA, in terms of the type of social capital stocked.

Future research could document the number and nature of contacts children and parents make while attending the various activities in question or as a result of participation in these activities. The analysis of such data would help to gain better understanding of the types of social capital accumulated through participation in different leisure activities.

Similarly, there is a need for additional research into whether parents of attendees in OSA, outside the home environment, build up "intergenerational closure", and if so, how the connections among parents from different families are used to foster children's development.

6.4.5 Barriers to Participation in Leisure OSA

The present study found a clear socio-economic disparity in children's participation in OSA, and noted that this disparity has implications for children's academic outcomes. However, the possible reasons why such inequality in participation develops are still imperfectly understood. There is a need to develop a model that will take into account the social, economic, cultural and psychological barriers to participation. A detailed exploration of possible interactions between SES and particular barriers to children's participation is important for policy-making. This is because information that will further the understanding of the obstacles faced by families from diverse socio-economic backgrounds could lead to the creation of more effective interventions to reduce the inequality evident in this research.

6.4.6 Participation in OSA and Non-Cognitive Outcomes

The decision I have made to examine the stratification in children's academic performance and development meant that questions surrounding the associations between participation in OSA and other developmental

outcomes remained unanswered. Future research may be carried out to explore the associations between participation in various leisure domains and children's behavioural, emotional and physical outcomes.

6.4.7 Establishing Causality

One major difficulty with the statistical analysis I have used in this research is that, while it may identify relationships between diverse variables, it does not "explain" the causal mechanisms which underpin these relationships. This means that the results presented in the thesis do not give direct answers either to the question of why SES disparity in participation exists or to that of how participation promotes academic performance and development in children.

For this reason, the explanations discussed throughout the study and in the current chapter were built upon theoretical rationales and prior empirical findings. Nevertheless, such explanations essentially involve a certain degree of speculation. Hence, it is important to develop more in-depth research to elucidate the causal processes that underpin the patterns found in this thesis.

One way forward, in this context, could be the development of quasi-experimental/interventional studies in which volunteer participants would be allocated to different activity groups. Such studies could be conducted, for example, on a small scale (to compare two matched schools), or on a larger-scale "whole town" intervention (to compare cities in which different programmes were introduced).

6.5 Summing Up

The thesis, which was both theoretically driven and policy oriented, has achieved the empirical and theoretical objectives envisaged in the introduction. This has been done, firstly, by contributing to the limited body of British research that exists regarding the socio-economic disparity in participation of school-age children in various leisure domains; secondly, by documenting the relationships between socio-economic inequality in leisure participation and the academic outcomes of school-age children; and thirdly, by clarifying whether the links between participation in various leisure activities and children's academic development varies by SES. Together, this allowed the implications of participation in various activities for the socio-economic gap in academic achievement to be discussed.

Specifically, the study's explorations have led to the conclusion that leisure participation may be one of the bases of academic inequality among school-age children in Britain. This is because, while participation in such activities is generally associated with improved academic performance and positive academic development, children in higher-SES groups are more likely to experience such activities than peers who grow up in lower-SES families. Thus, reducing inequality in leisure participation could aid in narrowing the academic achievement gap.

The thesis has also contributed theoretically. The discussion carried out throughout the chapters showed that the theories of social and cultural capital provide a fruitful framework within which to interpret the gaps in leisure participation and to investigate why such activities may boost

academic development. In addition, the theoretical discussion contributed to opening avenues for new research by utilising concepts imported from extant research on adults.

Finally, the thesis has drawn important policy implications. It has suggested how interventions aimed at reducing the socio-economic gap in leisure participation should be prioritised, and has identified the aspects that should be addressed in order to create effective intervention strategies.

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APPENDICES

Appendix 1 – Correlation Matrix

	NS-SEC	NVQ	Income	Mother W.Hrs	Child Sex	Parents in HH	Adults in HH	Children in HH	CM Sees Grandp'	School Type	CM Absent
NS-SEC		.544**	.645**	.134**	.004	-.394**	-.063**	-.093**	.076**	.134**	-.076**
		12260	12038	8082	12261	12261	12240	12261	12215	12194	12193
NVQ	.544**		.517**	.062**	.005	-.310**	-.064**	-.072**	.078**	.141**	-.063**
	12260		12038	8082	12260	12260	12240	12260	12215	12194	12193
Income	.645**	.517**		.141**	.002	-.415**	-.068**	-.155**	.073**	.171**	-.090**
	12038	12038		7918	12038	12038	12020	12038	12001	11979	11978
Mother W.Hrs	.134**	.062**	.141**		.001	.074**	.077**	-.128**	-.005	.041**	-.043**
	8082	8082	7918		8082	8082	8068	8082	8082	8080	8080
Child's Sex	.004	.005	.002	.001		.010	.004	-.001	.016	-.006	.049**
	12261	12260	12038	8082		12261	12240	12261	12215	12194	12193
Parents in HH	-.394**	-.310**	-.415**	.074**	.010		.040**	-.148**	-.047**	-.072**	.062**
	12261	12260	12038	8082	12261		12240	12261	12215	12194	12193
Adults in HH	-.063**	-.064**	-.068**	.077**	.004	.040**		-.030**	-.052**	.034**	.024**
	12240	12240	12020	8068	12240	12240		12240	12195	12176	12175
Children in HH	-.093**	-.072**	-.155**	-.128**	-.001	-.148**	-.030**		.068**	-.008	.025**
	12261	12260	12038	8082	12261	12261	12240		12215	12194	12193
CM Sees Grandpa'	.076**	.078**	.073**	-.005	.016	-.047**	-.052**	.068**		.083**	.019*
	12215	12215	12001	8082	12215	12215	12195	12215		12189	12188
School Type	.134**	.141**	.171**	.041**	-.006	-.072**	.034**	-.008	.083**		-.043**
	12194	12194	11979	8080	12194	12194	12176	12194	12189		12193
CM Absent	-.076**	-.063**	-.090**	-.043**	.049**	.062**	.024**	.025**	.019*	-.043**	
	12193	12193	11978	8080	12193	12193	12175	12193	12188	12193	

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Appendix 2 – A Typical Day in "Kidzcare" Out-of-School Clubs (Edinburgh & the Borders)*

A Typical Day in Out Of School Clubs

Throughout our Out of School Clubs it is our priority to make sure that your child gets the most out of their time there, so in order to do this have some daily ground rules. These rules are implemented to ensure the safety and well-being of your children while on their way to club from school and once they are in the club. Each day at Kidzcare you should expect these things to happen on a daily basis.

1. Collections in school playgrounds

As you would expect, our children are given certain boundaries, both physical and behavioural, while they wait in the playground before going to their club. In the playground children can happily run about and play within a pre-designated area in the playground and good behaviour to each other and staff is encouraged. Your child will be supervised at all times. In addition our staff will ensure that all children's belongings are kept in a designated, supervised place and kept tidy.

2. Snack

When your child arrives at the club they will be given a healthy snack every day after school. They will be asked to wash their hands and have to sit while they are eating. The snack will always include something substantial e.g. sandwich, a piece of fruit or veg and a little treat e.g biscuit or some crisps.

3. Activities

Each club will prepare and publicise a weekly activity plan which will be displayed on the club notice board. This will typically include one main art & craft activity related to the week's theme and a physical play activity for each day. Children will be invited to participate in all events but none will be forced to join in unless everyone in the club is going out on a particular excursion. Free play, quiet space and role playing always forms part of a normal day at the club.

4. Console games, TVs and DVDs

We appreciate that some parents are sensitive to the time spent by some children on these activities. However in order to ensure as much choice as possible for our children and their parents, playstations, TVs and DVD(videos) are provided at each club. All games are non-violent and rated 3+ and playstations are only available for use on certain days of the week or at certain times of the day. Turns on the playstation/games console will last for no

longer than ten minutes. Only two children at a time are allowed on the playstation, and a member of staff will supervise playstation use and a rota at all times to ensure fair distribution of usage for all who are interested.
TVs and DVDs are only used for watching films. These times are usually planned in advance and happen only on particular days or as part of a theme week. You will not find them out in the club or in use every day.

5. Outdoor play

Where we have an area for outdoor play it will be fully supervised with ground rules agreed with the children and the club team. Kidzcare run many external excursions during term and holiday times, weather permitting! This may involve walking short distances to local sites, or use of Kidzcare vehicles. Only suitable qualified drivers will be permitted to drive Kidzcare vehicles.

6. Excursions

During holiday camps, our objective will be to go out on at least one trip every day, weather permitting. On occasion we will take all children with us or we may run age specific excursions and have indoor or other outdoor activities for other age groups.
We also offer courses & coaching run by 3rd party organizations during holiday camps where will provide wraparound care. These offers may be made available to you at some locations when appropriate at an additional cost. These additional events are not mandatory and our traditional in-club play schemes will continue to run should you prefer.
We aim to adhere to our plans where practicable, but we believe it is wise to allow a degree of flexibility when the weather or the mood of the children may make it better to do something different. Activities can be organized, free, team and individual. Any activities suggested by children or parents/guardians will be accommodated wherever possible and children will be supervised at all times. Children are welcome to bring their own books, games and CD's into the club, but do so at their own risk and they should be prepared to share them with their friends. If these belongings do become a source of friction, we may ask the child to leave them at home or put them away while in the club. Our ethos is to introduce as many opportunities and choices to the children as possible through play so that they can test new skills or boundaries.

7. Homework

Homework facilities and assistance will be available to children with permission of the parent or guardian.

* Kidzcare Ltd. operates 13 after-school clubs across Edinburgh & the Borders. The information in this appendix was retrieved on June 19th 2012 from the following URL: http://www.kidzcare.org/out-of-school/a-typical-day/

Appendix 3 – Sport and PA Clubs/Classes: Examples of Aims and Curricula

Example 1: "Elite Feet" football club (Hertfordshire and North London)

… Elite Feet Football runs After School Clubs within Hertfordshire and North London that are not only fun, but developmental in their approach. We don't just baby sit for an hour after school, we take our players on a trip around the world of football, using our uniquely designed Global Curriculum.

Courses include our games, skills, drills and competitions as well as our Global Curriculum, where children learn about different countries, culture and football styles from around the world of football.

About our Nippers clubs… (ages 5-7): A mini step up from our Petite Feet classes – this course is slightly more challenging, and a slightly firmer focus on fundamental balls skills in employed. Games are still themed around player interests, however in this environment players are now introduced to matches and team games. We also start to introduce key social skills including sharing, taking turns, communication, teamwork and more! These skills aid children in any environment they are placed in within school life or outside.

* Extracted from: http://www.elitefeetfootball.co.uk/afterschoolclubs.html (December 10th 2012)

Example 2: Swimming Nature (London, Edinburgh)

Each child will receive a Progression Book with "bubble" stickers when they book onto their first term of lessons. At the end of each term your teacher will give you a personal report of what your child has achieved and you will be able to apply the stickers to your Progression Book. Using this along with the stickers will motivate them through a speedier learning curve

to achieve the seven water animal levels, from basic underwater waving to becoming a strong and stylish swimmer. We also award cloth badges of which there are 20 to collect for the key swimming skills

* Extracted from: http://www.swimmingnature.com/sn-public/children.html (December 10th 2012).

Whatever your age or swimming ability, our fun and motivational classes teach you how, why and what you should be doing in the water. Our friendly teachers train you in the pool as you adapt to the water, learn to float, and swim. You'll learn to relax, control your breathing and see how the right movement generates effortless swimming.

Our friendly water animal characters are here to help inspire, encourage and reward children as they progress through the programme. Our teachers use stimulating lesson plans that will keep your child busy and active for the full length of the lesson

* Extracted from: http://www.swimmingnature.com/sn-public/children_animals.html (December 10th 2012).

Example 3: SJCA Judo club (Glasgow and its surroundings)

"Sporting Judo Club ALBA (SJCA) is based in Clydebank and Glasgow, Scotland. With a successful history and pedigree, numerous Scottish & British Champions, several Commonwealth Games Medallists, a Youth Olympic Champion, a World Schoolboys Champion and a Sydney Olympian.

Judo is an excellent activity for adults, youths, boys and girls of all ages as it helps develop co-ordination, balance, fitness, flexibility and most importantly self-confidence. SJCA's goals are to help children learn the art of judo, not just the combat. We also want them to grow up fit and healthy, learning in a fun manner, but also aware of the judo culture, respect, courtesy, and honour. They will even learn some Japanese!"

* Extracted from: http://www.sportingjudo.com/index.html (June 10th 2012).

Appendix 4 – Enrichment clubs, aims and curriculum

Example 1: "Theatrebugs" Drama Club (London and south England)

"Fancy some term time dramatics for your child? Then a Theatrebugs After School Adventure Drama Class or Under 5s Club is in order! With a different theme each term we squeeze lots of fun, games, drama, song and dance into a jam packed class. They'll have a bucket load of fun while you watch their focus and vocabulary improve, their confidence bloom and their imagination soar! They will jump into our magical stories and become pirates, sharks, hedgehogs, fairies, princesses and maybe even dinosaurs! Your child gets the attention they deserve from fully trained, enhanced CRB checked teachers".

* Extracted from: http://www.theatrebugs.co.uk/franchise.html (June 10th 2012).

Example 2: "Perform" Drama Classes (London Area)

"Drama, dance and singing boosting confidence, focus and social skills. If you want to boost your child's confidence, improve their concentration or give them a creative outlet to make new friends and have fun, Perform is for you. We use a lively mix of energetic games, catchy songs and funky dances to help bring out children's true potential. With child development at the heart of all our activities, our workshops provide a unique learning experience for your child as well as the best fun they'll have all week".

* Extracted from: http://www.perform.org.uk/classes/weekly-classes/perform-48s/about-perform.html (June 10th 2012).

"…Each term there is a new theme such as The Jungle, Outer Space or Under The Sea and children receive a colourful sticker poster which they complete week-by-week before performing a presentation on the last day. The classes are divided into three parts and include a break for organic fruit and mineral water. Move & Feel – encompasses dances, rapid reaction games and yoga-inspired mirroring exercises. All the activities in this section focus on the children developing good coordination, balance and core stability as they grow. They'll enjoy greater self-assurance, improved posture

and real confidence in physical activities. Listen, Speak & Sing – concentrates on learning specially composed songs, tongue-twisters and raps. Fun modern words and a humorous approach means…ideal for boosting children's confidence, concentration and communication skills... Create & Imagine – is the drama-based part of the workshop and includes confidence-building games, character explorations, storytelling and team-building role-playing improvisations… improve children's attention at school by focusing on concentration, imagination listening skills in a fun and imaginative way".

* Extracted from: http://www.perform.org.uk/classes/weekly-classes/perform-48s/curriculum.html (June 10th 2012).

Example 3: "Mother Nature" After School Science Academy

"The Mother Nature Science Academy allows children to explore, investigate and discover the core subject 'Science' in a stimulating learning environment. This is a great alternative to the other after/before school clubs (e.g. football, art, music… etc.).

The Science Academy is designed to motivate and build confidence in children who struggle with Science or find it unnecessarily intimidating, and provide an extra outlet for children who already show aptitude and are interested in furthering their learning.

Although the sessions complement the curriculum, they are not designed to be about writing, tests, or exams. Activities involve practical experiments, investigation, discussion and reflection. Most of all, they are designed to be fun! … "

* Extracted from: http://www.mnature.co.uk/after_school.html (June 19th 2012).

Appendix 5: Multistage Regression Models

Table A1: Multilevel binary models estimating the associations between SES and 7-year-olds' visits to art venues (*p<0.05,**p<0.01)

	Model 1 Coeff'/S.E	**Model 2** Coeff'/S.E	**Model 3** Coeff'/S.E
Constant	0.775** (0.04)	-0.512** (0.10)	-0.449** (0.12)
Child, parents and household factors			
Parental occupation (Ref: Routine/manual)			
Intermediate		0.155*	0.162*
		(0.06)	(0.06)
Managerial		0.416**	0.418**
		(0.07)	(0.07)
Not working		0.010	-0.034
		(0.07)	(0.07)
Mother's working hours		0.001	-0.000
		(0.00)	(0.00)
Parental education (Ref: No formal qualifications)			
GCSE		0.201*	0.208*
		(0.10)	(0.10)
A-levels		0.512**	0.506**
		(0.08)	(0.08)
University degree		1.075**	1.071**
		(0.09)	(0.09)
Household income (Ref: Bottom quartile)			
2nd quartile		0.153*	0.150*
		(0.06)	(0.06)
3rd quartile		0.356**	0.345**
		(0.07)	(0.07)
Top quartile		0.726**	0.694**
		(0.08)	(0.09)
Child sex (Ref: Girl)			
Boy		0.095*	0.091*
		(0.04)	(0.04)
Family characteristics			
Parenting composition (Ref: Co-parent home)			
Single-mother home			0.099
			(0.06)
Adults in household (Ref: No)			
Yes			-0.144
			(0.08)
Children in household (Ref: One child)			
Two children			0.002
			(0.07)
Three or more children			-0.222**
			(0.07)
CM meets grandparent/s (Ref: Every day/almost)			
At least once a week			0.056
			(0.05)
At least once a month			0.212**
			(0.07)
Never or rarely			0.095
			(0.06)
Ward Level Variance	0.369 (0.045)	0.184 (0.028)	0.180 (0.028)
Log Likelihood	-7635.26	-7080.00	-7048.14
N	12,410	12,238	12,215

Table A2: Multilevel binary models estimating the associations between SES and 7-year-olds' visits to the cinema (*p<0.05,**p<0.01)

	Model 1	**Model 2**	**Model 3**
	Coeff'/S.E	Coeff'/S.E	Coeff'/S.E
Constant	1.616**	0.047	0.269
	(0.05)	(0.10)	(0.14)
Child, parents and household factors			
Parental occupation (Ref: Routine/manual)			
Intermediate		0.302**	0.337**
		(0.08)	(0.08)
Managerial		0.393**	0.438**
		(0.08)	(0.08)
Not working		-0.026	-0.218**
		(0.08)	(0.08)
Mother's working hours		0.017**	0.011**
		(0.00)	(0.00)
Parental education (Ref: No formal qualifications)			
GCSE		0.129	0.137
		(0.10)	(0.10)
A-levels		0.787**	0.785**
		(0.08)	(0.09)
University degree		1.021**	1.076**
		(0.09)	(0.10)
Household income (Ref: Bottom quartile)			
2nd quartile		0.172*	0.245**
		(0.07)	(0.07)
3rd quartile		0.402**	0.506**
		(0.08)	(0.09)
Top quartile		0.858**	0.974**
		(0.10)	(0.11)
Child sex (Ref: Girl)			
Boy		-0.004	-0.009
		(0.05)	(0.05)
Family characteristics			
Parenting composition (Ref: Co-parent home)			
Single-mother home			0.583**
			(0.07)
Adults in household (Ref: No)			
Yes			-0.024
			(0.09)
Children in household (Ref: One child)			
Two children			-0.161
			(0.09)
Three or more children			-0.438**
			(0.09)
CM meets grandparent/s (Ref: Every day/almost)			
At least once a week			-0.019
			(0.06)
At least once a month			-0.067
			(0.08)
Never or rarely			-0.305**
			(0.07)
Ward Level Variance	0.396 (0.051)	0.136 (0.026)	0.116 (0.025)
Log Likelihood	-5989.01	-5432.85	-5335.64
N	12,410	12,238	12,215

Table A3: Multilevel binary models estimating the associations between SES and 7-year-olds' spectatorship of professional sport events (*p<0.05,**p<0.01)

	Model 1	**Model 2**	**Model 3**
	Coeff'/S.E	Coeff'/S.E	Coeff'/S.E
Constant	-1.079**	-2.709**	-2.473**
	(0.03)	(0.14)	(0.16)
Child, parents and household factors			
Parental occupation (Ref: Routine/manual)		0.154*	0.156*
Intermediate		(0.07)	(0.07)
		0.270**	0.292**
Managerial		(0.07)	(0.07)
		-0.216*	-0.222*
Not working		(0.09)	(0.09)
		0.002	0.001
Mother's working hours		(0.00)	(0.00)
Parental education (Ref: No formal qualifications)			
GCSE		-0.083	-0.112
		(0.16)	(0.16)
A-levels		0.507**	0.448**
		(0.12)	(0.13)
University degree		0.606**	0.582**
		(0.13)	(0.13)
Household income (Ref: Bottom quartile)			
2nd quartile		0.300**	0.291**
		(0.08)	(0.08)
3rd quartile		0.385**	0.364**
		(0.08)	(0.09)
Top quartile		0.574**	0.553**
		(0.09)	(0.09)
Child sex (Ref: Girl)			
Boy		1.080**	1.085**
		(0.05)	(0.05)
Family characteristics			
Parenting composition (Ref: Co-parent home)			
Single-mother home			0.007
			(0.07)
Adults in household (Ref: No)			
Yes			-0.287**
			(0.10)
Children in household (Ref: One child)			
Two children			0.060
			(0.07)
Three or more children			-0.060
			(0.08)
CM meets grandparent/s (Ref: Every day/almost)			
At least once a week			-0.202**
			(0.05)
At least once a month			-0.264**
			(0.07)
Never or rarely			-0.426**
			(0.07)
Ward Level Variance	0.188 (0.026)	0.109 (0.020)	0.088 (0.019)
Log Likelihood	-6888.81	-6288.64	-6251.72
N	12,410	12,238	12,215

Table A4: Multilevel binary models estimating the associations between SES and 7-year-olds' visits to theme-parks and funfairs (*p<0.05,**p<0.01)

	Model 1	**Model 2**	**Model 3**
	Coeff'/S.E	Coeff'/S.E	Coeff'/S.E
Constant	0.862**	0.220*	0.431**
	(0.03)	(0.09)	(0.12)
Child, parents and household factors			
Parental occupation (Ref: Routine/manual)			
Intermediate		0.204**	0.213**
		(0.07)	(0.07)
Managerial		0.151*	0.189**
		(0.07)	(0.07)
Not working		-0.032	-0.093
		(0.07)	(0.07)
Mother's working hours		0.006**	0.003
		(0.00)	(0.00)
Parental education (Ref: No formal qualifications)			
GCSE		0.117	0.108
		(0.10)	(0.10)
A-levels		0.318**	0.278**
		(0.08)	(0.08)
University degree		0.295**	0.297**
		(0.09)	(0.09)
Household income (Ref: Bottom quartile)			
2nd quartile		0.123*	0.140*
		(0.06)	(0.06)
3rd quartile		0.169*	0.193**
		(0.07)	(0.07)
Top quartile		0.271**	0.303**
		(0.08)	(0.08)
Child sex (Ref: Girl)			
Boy		0.068	0.072
		(0.04)	(0.04)
Family characteristics			
Parenting composition (Ref: Co-parent home)			
Single-mother home			0.194**
			(0.06)
Adults in household (Ref: No)			
Yes			0.144
			(0.08)
Children in household (Ref: One child)			
Two children			-0.001
			(0.07)
Three or more children			-0.199**
			(0.07)
CM meets grandparent/s (Ref: Every day/almost)			
At least once a week			-0.132**
			(0.05)
At least once a month			-0.307**
			(0.06)
Never or rarely			-0.322**
			(0.06)
Ward Level Variance	0.092 (0.018)	0.072 (0.017)	0.063 (0.017)
Log Likelihood	-7586.31	-7414.64	-7358.55
N	12,410	12,238	12,215

Table A5: Multilevel binary models estimating the associations between SES and 7-year-olds' engagement in shared reading (*p<0.05,**p<0.01)

	Model 1	**Model 2**	**Model 3**
	Coeff'/S.E	Coeff'/S.E	Coeff'/S.E
Constant	1.119**	0.452**	0.960**
	(0.03)	(0.10)	(0.12)
Child, parents and household factors			
Parental occupation (Ref: Routine/manual)			
Intermediate		0.089	0.091
		(0.07)	(0.07)
Managerial		0.217**	0.230**
		(0.07)	(0.07)
Not working		-0.341**	-0.288**
		(0.07)	(0.07)
Mother's working hours		-0.013**	-0.014**
		(0.00)	(0.00)
Parental education (Ref: No formal qualifications)			
GCSE		0.279**	0.246*
		(0.10)	(0.10)
A-levels		0.529**	0.464**
		(0.08)	(0.08)
University degree		0.859**	0.824**
		(0.09)	(0.09)
Household income (Ref: Bottom quartile)			
2nd quartile		-0.008	-0.043
		(0.06)	(0.06)
3rd quartile		0.266**	0.182*
		(0.07)	(0.08)
Top quartile		0.538**	0.418**
		(0.08)	(0.09)
Child sex (Ref: Girl)			
Boy		-0.009	-0.005
		(0.04)	(0.04)
Family characteristics			
Parenting composition (Ref: Co-parent home)			
Single-mother home			-0.200**
			(0.06)
Adults in household (Ref: No)			
Yes			-0.170*
			(0.08)
Children in household (Ref: One child)			
Two children			-0.215**
			(0.07)
Three or more children			-0.458**
			(0.07)
CM meets grandparent/s (Ref: Every day/almost)			
At least once a week			-0.051
			(0.05)
At least once a month			-0.147*
			(0.07)
Never or rarely			-0.126*
			(0.06)
Ward Level Variance	0.155 (0.025)	0.073 (0 .017)	0.075 (0.018)
Log Likelihood	-7161.24	-6827.61	-6776.67
N	12585	12409	12376

Table A6: Multilevel binary models estimating the associations between SES and 7-year-olds' engagement in shared creative activities (*p<0.05,**p<0.01)

	Model 1	**Model 2**	**Model 3**
	Coeff'/S.E	Coeff'/S.E	Coeff'/S.E
Constant	0.172**	0.424**	1.168**
	(0.02)	(0.09)	(0.12)
Child, parents and household factors			
Parental occupation (Ref: Routine/manual)			
Intermediate		-0.016	-0.020
		(0.06)	(0.06)
Managerial		-0.103	-0.088
		(0.06)	(0.06)
Not working		-0.209**	-0.070
		(0.07)	(0.07)
Mother's working hours		-0.005**	-0.005**
		(0.00)	(0.00)
Parental education (Ref: No formal qualifications)			
GCSE		0.047	-0.003
		(0.10)	(0.10)
A-levels		0.098	0.012
		(0.08)	(0.08)
University degree		0.238**	0.175*
		(0.08)	(0.09)
Household income (Ref: Bottom quartile)			
2nd quartile		-0.179**	-0.253**
		(0.06)	(0.06)
3rd quartile		-0.151*	-0.311**
		(0.07)	(0.07)
Top quartile		-0.081	-0.293**
		(0.07)	(0.08)
Child sex (Ref: Girl)			
Boy		-0.282**	-0.279**
		(0.04)	(0.04)
Family characteristics			
Parenting composition (Ref: Co-parent home)			
Single-mother home			-0.517**
			(0.05)
Adults in household (Ref: No)			
Yes			-0.160*
			(0.07)
Children in household (Ref: One child)			
Two children			-0.253**
			(0.06)
Three or more children			-0.478**
			(0.06)
CM meets grandparent/s (Ref: Every day/almost)			
At least once a week			-0.255**
			(0.05)
At least once a month			-0.354**
			(0.06)
Never or rarely			-0.201**
			(0.05)
Ward Level Variance	0.064 (0.014)	0.065 (0.014)	0.059 (0.013)
Log Likelihood	-8657.46	-8487.01	-8373.45
N	12585	12409	12376

Table A7: Multilevel binary models estimating the associations between SES and 7-year-olds' engagement in joint indoor play (*p<0.05,**p<0.01)

	Model 1 Coeff'/S.E	**Model 2** Coeff'/S.E	**Model 3** Coeff'/S.E
Constant	1.591**	1.335**	2.548**
	(0.03)	(0.11)	(0.15)
Child, parents and household factors			
Parental occupation (Ref: Routine/manual)			
Intermediate		0.050	0.046
		(0.08)	(0.08)
Managerial		0.217**	0.241**
		(0.08)	(0.08)
Not working		-0.636**	-0.352**
		(0.08)	(0.08)
Mother's working hours		-0.011**	-0.009**
		(0.00)	(0.00)
Parental education (Ref: No formal qualifications)			
GCSE		-0.075	-0.169
		(0.11)	(0.11)
A-levels		0.209*	0.037
		(0.09)	(0.09)
University degree		0.387**	0.263**
		(0.10)	(0.10)
Household income (Ref: Bottom quartile)			
2nd quartile		0.011	-0.131
		(0.07)	(0.07)
3rd quartile		0.189*	-0.131
		(0.08)	(0.09)
Top quartile		0.317**	-0.112
		(0.10)	(0.10)
Child sex (Ref: Girl)			
Boy		0.170**	0.181**
		(0.05)	(0.05)
Family characteristics			
Parenting composition (Ref: Co-parent home)			
Single-mother home			-0.936**
			(0.06)
Adults in household (Ref: No)			
Yes			-0.133
			(0.09)
Children in household (Ref: One child)			
Two children			-0.467**
			(0.09)
Three or more children			-0.879**
			(0.09)
CM meets grandparent/s (Ref: Every day/almost)			
At least once a week			-0.053
			(0.06)
At least once a month			-0.344**
			(0.08)
Never or rarely			-0.346**
			(0.07)
Ward Level Variance	0.146 (0.027)	0.104 (0.024)	0.092 (0.023)
Log Likelihood	-5932.38	-5701.71	-5529.25
N	12585	12409	12376

Table A8: Multilevel binary models estimating the associations between SES and 7-year-olds' usage of electronic media (*p<0.05,**p<0.01)

	Model 1 Coeff'/S.E	**Model 2** Coeff'/S.E	**Model 3** Coeff'/S.E
Constant	-0.538**	-0.527**	-0.317**
	(0.03)	(0.10)	(0.12)
Child, parents and household factors			
Parental occupation (Ref: Routine/manual)			
Intermediate		-0.036	-0.046
		(0.06)	(0.06)
Managerial		-0.231**	-0.230**
		(0.06)	(0.06)
Not working		0.102	0.159*
		(0.07)	(0.07)
Mother's working hours		0.007**	0.007**
		(0.00)	(0.00)
Parental education (Ref: No formal qualifications)			
GCSE		-0.201*	-0.217*
		(0.10)	(0.10)
A-levels		-0.146	-0.200*
		(0.08)	(0.08)
University degree		-0.358**	-0.395**
		(0.09)	(0.09)
Household income (Ref: Bottom quartile)			
2nd quartile		-0.040	-0.076
		(0.06)	(0.06)
3rd quartile		-0.099	-0.174*
		(0.07)	(0.07)
Top quartile		-0.267**	-0.362**
		(0.08)	(0.08)
Child sex (Ref: Girl)			
Boy		0.610**	0.612**
		(0.04)	(0.04)
Family characteristics			
Parenting composition (Ref: Co-parent home)			
Single-mother home			-0.187**
			(0.06)
Adults in household (Ref: No)			
Yes			0.044
			(0.08)
Children in household (Ref: One child)			
Two children			0.055
			(0.06)
Three or more children			-0.137*
			(0.07)
CM meets grandparent/s (Ref: Every day/almost)			
At least once a week			-0.028
			(0.05)
At least once a month			-0.098
			(0.06)
Never or rarely			-0.224**
			(0.06)
Ward Level Variance	0.182 (0.026)	0.130 (0.021)	0.119 (0.020)
Log Likelihood	-8217.46	-7929.09	-7894.75
N	12569	12396	12376

Appendix 6: Diagnostic tables assessing the use of sets of separate out-of-school activities vs. activities index

Social-group activities

Table 6A: Models assessing the effect of a set of separate club activities vs. an index combining the different club sessions, on the verbal outcome (N=11,145-11,017)

	Model 1: Public & home activities	**Model 2:** Public, home & club activities	**Model 3:** Public & home activities plus clubs index
	Coeff'/S.E.	Coeff'/S.E.	Coeff'/S.E.
Child, parents and household factors			
Parental occupation (NS-SEC)			
Ref: Routine/Manual			
Intermediate	0.783** (0.27)	0.791** (0.27)	0.751** (0.27)
Managerial	1.308** (0.27)	1.321** (0.27)	1.252** (0.27)
Not working	0.092 (0.31)	0.132 (0.31)	0.088 (0.31)
Mother's working hours	-0.014* (0.01)	-0.012 (0.01)	-0.016* (0.01)
Parental education (NVQ)			
Ref: No formal qualification			
GCSE or equivalent	0.838 (0.46)	0.816 (0.46)	0.818 (0.46)
A-levels or equivalent	1.583** (0.38)	1.463** (0.38)	1.535** (0.38)
University degree or equivalent	2.799** (0.41)	2.588** (0.41)	2.710** (0.41)
Household's income			
Ref: Bottom quartile			
2nd quartile	0.592* (0.27)	0.539* (0.27)	0.575* (0.27)
3rd quartile	1.162** (0.31)	1.044** (0.31)	1.107** (0.31)
Top quartile	1.674** (0.35)	1.594** (0.35)	1.557** (0.35)
Gender			
Ref: Girl			
Boy	-1.579** (0.17)	-1.484** (0.17)	-1.551** (0.17)
Family characteristics			
Parenting composition			
Ref: Co-parent household			
Single-mother household	-0.448 (0.25)	-0.358 (0.25)	-0.481 (0.25)
Adults in household			
Ref: No			
Yes	0.243 (0.33)	0.363 (0.34)	0.270 (0.33)
Children in household			
Ref: One child			
Two children	0.070 (0.27)	0.104 (0.27)	0.090 (0.27)
Three or more children	-0.346 (0.29)	-0.297 (0.29)	-0.303 (0.29)
School type and educational measures			
School fee applied?			
Ref: No			
Yes	2.390** (0.49)	2.530** (0.49)	2.269** (0.49)
Absenteeism			
Ref: Never			
Rarely	-0.939** (0.20)	-0.932** (0.20)	-0.927** (0.20)
Frequently	-2.482** (0.22)	-2.385** (0.22)	-2.446** (0.22)
Child's verbal test score at age 5	0.263** (0.01)	0.259** (0.01)	0.263** (0.01)
Participation in commercial-public activities			
Ref: Never			
Visits to art venues - sweep 3	0.729* (0.35)	0.709* (0.35)	0.703* (0.35)
Visits to art venues - sweep 4	0.849** (0.23)	0.795** (0.24)	0.829** (0.23)
Visits to art venues - both sweeps	1.217** (0.24)	1.156** (0.24)	1.174** (0.24)
Visits to the cinema - sweep 3	0.267 (0.41)	0.295 (0.41)	0.232 (0.41)
Visits to the cinema - sweep 4	0.517 (0.31)	0.480 (0.31)	0.493 (0.31)
Visits to the cinema - both sweeps	1.075** (0.28)	0.975** (0.28)	1.008** (0.28)
Visits to sport events - sweep 3	-0.683* (0.34)	-0.744* (0.34)	-0.717* (0.34)
Visits to to sport events - sweep 4	0.215 (0.23)	0.090 (0.23)	0.168 (0.23)
Visits to to sport events - both sweeps	0.664* (0.31)	0.482 (0.31)	0.560 (0.31)
Visits to theme parks - sweep 3	0.399 (0.30)	0.381 (0.30)	0.379 (0.30)
Visits to theme parks - sweep 4	0.160 (0.29)	0.164 (0.29)	0.145 (0.29)
Visits to theme parks - both sweeps	0.471 (0.25)	0.441 (0.25)	0.428 (0.25)
Engagement in home-centred activities			
Ref: Low			
Shared reading - moderate	0.213 (0.39)	0.231 (0.39)	0.209 (0.39)
Shared reading - high	0.394 (0.40)	0.332 (0.40)	0.369 (0.40)
Shared creative activities - moderate	-0.282 (0.28)	-0.269 (0.28)	-0.290 (0.28)
Shared creative activities - high	-1.237** (0.31)	-1.181** (0.31)	-1.227** (0.31)
Shared indoor games - moderate	0.666** (0.26)	0.614* (0.26)	0.641* (0.26)
Shared indoor games - high	0.950** (0.33)	0.942** (0.33)	0.927** (0.33)
Media usage - moderate	-0.518 (0.60)	-0.516 (0.60)	-0.488 (0.60)
Media usage - high	-0.329 (0.62)	-0.289 (0.62)	-0.271 (0.62)
Attendance at out-of-school clubs			

Ref: Never			
After school clubs - sweep 3		0.051 (0.39)	
After school clubs - sweep 4		-0.189 (0.24)	
After school clubs - both sweeps		-1.035** (0.36)	
Sport clubs - sweep 3		-0.420 (0.34)	
Sport clubs - sweep 4		0.890** (0.25)	
Sport clubs - both sweeps		0.684** (0.25)	
Enrichment clubs - sweep 4		0.680** (0.18)	
Out-of-school clubs index			0.098** (0.03)
Constant	31.62** (1.03)	31.50** (1.03)	31.55** (1.03)
Diagnostics			
Student Level Variance	73.61 (1.00)	72.85 (0.99)	73.53 (0.99)
Ward Level variance	6.32 (0.69)	6.11 (0.68)	6.36 (0.70)
-2LL	39976.41	39959.12	39971.39
-2LL Reduction		**17.29**	**5.02**

Table 6B: Models assessing the effect of a set of separate club activities vs. an index combining the different club sessions, on the non-verbal outcome (N=11,226-11,097)

	Model 1: Public & home activities	**Model 2:** Public, home & club activities	**Model 3:** Public & home activities plus clubs index
	Coeff'/S.E.	Coeff'/S.E.	Coeff'/S.E.
Child, parents and household factors			
Parental occupation (NS-SEC)			
Ref: Routine/Manual			
Intermediate	0.773** (0.27)	0.730** (0.27)	0.738** (0.27)
Managerial	1.288** (0.28)	1.215** (0.28)	1.226** (0.28)
Not working	0.289 (0.32)	0.342 (0.32)	0.284 (0.32)
Mother's working hours	-0.007 (0.01)	-0.006 (0.01)	-0.009 (0.01)
Parental education (NVQ)			
Ref: No formal qualification			
GCSE or equivalent	-0.250 (0.46)	-0.198 (0.47)	-0.272 (0.46)
A-levels or equivalent	0.468 (0.38)	0.482(0.38)	0.416 (0.38)
University degree or equivalent	0.985* (0.41)	0.895* (0.41)	0.884* (0.41)
Household's income			
Ref: Bottom quartile			
2nd quartile	0.482 (0.28)	0.502 (0.28)	0.465 (0.28)
3rd quartile	0.848** (0.31)	0.763* (0.31)	0.787* (0.31)
Top quartile	1.405** (0.35)	1.295** (0.35)	1.277** (0.35)
Gender			
Ref: Girl			
Boy	0.346* (0.17)	0.403* (0.18)	0.377* (0.17)
Family characteristics			
Parenting composition			
Ref: Co-parent household			
Single-mother household	-0.038 (0.25)	0.018 (0.25)	-0.074 (0.25)
Adults in household			
Ref: No			
Yes	-0.021 (0.34)	0.005 (0.34)	0.013 (0.34)
Children in household			
Ref: One child			
Two children	0.408 (0.27)	0.366 (0.27)	0.429 (0.27)
Three or more children	0.553 (0.29)	0.514 (0.29)	0.601* (0.29)
School type and educational measures			
School fee applied?			
Ref: No			
Yes	1.110* (0.49)	1.210* (0.50)	0.981* (0.49)
Absenteeism			
Ref: Never			
Rarely	-0.087 (0.20)	-0.063 (0.20)	-0.072 (0.20)
Frequently	-0.858** (0.22)	-0.829** (0.22)	-0.820** (0.22)
Child's non-verbal test score at age 5	0.568** (0.01)	0.568** (0.01)	0.567** (0.01)
Participation in commercial-public activities			
Ref: Never			
Visits to art venues - sweep 3	0.175 (0.36)	0.182 (0.36)	0.148 (0.36)
Visits to art venues - sweep 4	0.579* (0.24)	0.544* (0.24)	0.561* (0.24)
Visits to art venues - both sweeps	1.466** (0.24)	1.401** (0.24)	1.419** (0.24)
Visits to the cinema - sweep 3	0.590 (0.42)	0.600 (0.42)	0.553 (0.42)
Visits to the cinema - sweep 4	0.931** (0.32)	0.846** (0.32)	0.902** (0.32)
Visits to the cinema - both sweeps	1.022** (0.28)	0.902** (0.28)	0.946** (0.28)
Visits to sport events - sweep 3	-0.075 (0.35)	-0.140 (0.35)	-0.108 (0.35)
Visits to to sport events - sweep 4	-0.434 (0.24)	-0.474* (0.24)	-0.487* (0.24)
Visits to to sport events - both sweeps	-0.371 (0.31)	-0.432 (0.31)	-0.485 (0.31)

Visits to theme parks - sweep 3	-0.703* (0.30)	-0.778* (0.31)	-0.723* (0.30)
Visits to theme parks - sweep 4	-0.578 (0.30)	-0.626* (0.30)	-0.593* (0.30)
Visits to theme parks - both sweeps	-0.187 (0.25)	-0.276 (0.25)	-0.230 (0.25)
Engagement in home-centred activities			
Ref: Low			
Shared reading - moderate	0.395 (0.39)	0.468 (0.39)	0.392 (0.39)
Shared reading - high	-0.307 (0.40)	-0.263 (0.40)	-0.335 (0.40)
Shared creative activities - moderate	0.694* (0.28)	0.683* (0.29)	0.686* (0.28)
Shared creative activities - high	0.911** (0.31)	0.920** (0.31)	0.924** (0.31)
Shared indoor games - moderate	-0.060 (0.26)	0.009 (0.26)	-0.087 (0.26)
Shared indoor games - high	-0.234 (0.33)	-0.155 (0.34)	-0.258 (0.33)
Media usage - moderate	0.247 (0.60)	0.438 (0.61)	0.279 (0.60)
Media usage - high	-0.022 (0.62)	0.233 (0.63)	0.040 (0.62)
Attendance at out-of-school clubs			
Ref: Never			
After school clubs - sweep 3		0.290 (0.39)	
After school clubs - sweep 4		-0.472* (0.24)	
After school clubs - both sweeps		0.101 (0.36)	
Sport clubs - sweep 3		0.329 (0.35)	
Sport clubs - sweep 4		-0.086 (0.26)	
Sport clubs - both sweeps		0.463 (0.26)	
Enrichment clubs - sweep 4		0.562** (0.18)	
Out-of-school clubs index			0.106** (0.03)
Constant	20.16** (1.02)	19.75** (1.03)	20.09** (1.02)
Diagnostics			
Snijders/Bosker R^2 Student Level	76.54 (1.03)	75.98 (1.03)	76.47 (1.03)
Snijders/Bosker R^2 Ward Level	2.55 (0.40)	2.58 0.40)	2.52 (0.39)
-2LL	40393.49	40364.63	40387.73
-2LL Reduction		28.86	5.76

Commercial-public activities

Table 6C: Models assessing the effect of a set of separate commercial-public activities vs. an index of commercial-public activities, on the verbal outcome (N=11,019-11,017)

	Model 1: Club & home activities	**Model 2:** Club, home & public activities separate	**Model 3:** Club, home & public activities index
	Coeff'/S.E.	Coeff'/S.E.	Coeff'/S.E.
Child, parents and household factors			
Parental occupation (NS-SEC)			
Ref: Routine/Manual			
Intermediate	0.890** (0.27)	0.791** (0.27)	0.810** (0.27)
Managerial	1.461** (0.27)	1.321** (0.27)	1.311** (0.28)
Not working	0.085 (0.31)	0.132 (0.31)	0.153 (0.31)
Mother's working hours	-0.010 (0.01)	-0.012 (0.01)	-0.012 (0.01)
Parental education (NVQ)			
Ref: No formal qualification			
GCSE or equivalent	0.851 (0.46)	0.816 (0.46)	0.806 (0.46)
A-levels or equivalent	1.684** (0.38)	1.463** (0.38)	1.445** (0.38)
University degree or equivalent	2.936** (0.41)	2.588** (0.41)	2.604** (0.41)
Household's income			
Ref: Bottom quartile			
2nd quartile	0.650* (0.27)	0.539* (0.27)	0.530 (0.27)
3rd quartile	1.217** (0.31)	1.044** (0.31)	1.020** (0.32)
Top quartile	1.829** (0.35)	1.594** (0.35)	1.593** (0.35)
Gender			
Ref: Girl			
Boy	-1.376** (0.17)	-1.484** (0.17)	-1.472** (0.17)
Family characteristics			
Parenting composition			
Ref: Co-parent household			
Single-mother household	-0.231 (0.25)	-0.358 (0.25)	-0.369 (0.25)
Adults in household			
Ref: No			
Yes	0.331 (0.34)	0.363 (0.34)	0.364 (0.34)
Children in household			

Ref: One child			
Two children	0.127 (0.27)	0.104 (0.27)	0.106 (0.27)
Three or more children	-0.335 (0.29)	-0.297 (0.29)	-0.295 (0.29)
School type and educational measures			
School fee applied?			
Ref: No			
Yes	2.617** (0.49)	2.530** (0.49)	2.532** (0.49)
Absenteeism			
Ref: Never			
Rarely	-0.891** (0.20)	-0.932** (0.20)	-0.922** (0.20)
Frequently	-2.343** (0.22)	-2.385** (0.22)	-2.375** (0.22)
Child's verbal test score at age 5	0.265** (0.01)	0.259** (0.01)	0.258** (0.01)
Attendance at out-of-school clubs			
Ref: Never			
After school clubs - sweep 3	0.080 (0.39)	0.051 (0.39)	-0.005 (0.39)
After school clubs - sweep 4	-0.158 (0.24)	-0.189 (0.24)	-0.177 (0.24)
After school clubs - both sweeps	-0.987** (0.36)	-1.035** (0.36)	-1.027** (0.36)
Sport clubs - sweep 3	-0.244 (0.34)	-0.420 (0.34)	-0.447 (0.34)
Sport clubs - sweep 4	1.017** (0.25)	0.890** (0.25)	0.860** (0.25)
Sport clubs - both sweeps	0.960** (0.25)	0.684** (0.25)	0.634* (0.25)
Enrichment clubs - sweep 4	0.775** (0.18)	0.680** (0.18)	0.679** (0.18)
Out-of-school clubs index			
Engagement in home-centred activities			
Ref: Low			
Shared reading - moderate	0.270 (0.39)	0.231 (0.39)	0.210 (0.39)
Shared reading - high	0.409 (0.40)	0.332 (0.40)	0.289 (0.40)
Shared creative activities - moderate	-0.214 (0.28)	-0.269 (0.28)	-0.287 (0.28)
Shared creative activities - high	-1.126** (0.31)	-1.181** (0.31)	-1.205** (0.31)
Shared indoor games - moderate	0.565* (0.26)	0.614* (0.26)	0.614* (0.26)
Shared indoor games - high	0.813* (0.33)	0.942** (0.33)	0.955** (0.33)
Media usage - moderate	-0.466 (0.60)	-0.516 (0.60)	-0.407 (0.60)
Media usage - high	-0.290 (0.62)	-0.289 (0.62)	-0.166 (0.62)
Participation in commercial-public activities			
Ref: Never			
Visits to art venues - sweep 3		0.709* (0.35)	
Visits to art venues - sweep 4		0.795** (0.24)	
Visits to art venues - both sweeps		1.156** (0.24)	
Visits to the cinema - sweep 3		0.295 (0.41)	
Visits to the cinema - sweep 4		0.480 (0.31)	
Visits to the cinema - both sweeps		0.975** (0.28)	
Visits to sport events - sweep 3		-0.744* (0.34)	
Visits to to sport events - sweep 4		0.090 (0.23)	
Visits to to sport events - both sweeps		0.482 (0.31)	
Visits to theme parks - sweep 3		0.381 (0.30)	
Visits to theme parks - sweep 4		0.164 (0.29)	
Visits to theme parks - both sweeps		0.441 (0.25)	
Commercial-public activities index			0.305** (0.05)
Constant	32.09** (1.01)	31.50** (1.03)	31.43** (1.01)
Diagnostics			
Student Level Variance	73.22 (1.00)	72.85 (0.99)	72.92 (0.99)
Ward Level variance	6.24 (0.69)	6.11 (0.68)	6.40 (0.70)
-2LL	39495.90	39459.12	39476.62
-2LL Reduction		36.77	19.28

Table 6D: Models assessing the effect of a set of separate commercial-public activities vs. an index of commercial-public activities, on the non-verbal outcome (N=11,019-11,017)

	Model 1: Club & home activities	**Model 2:** Club, home and public activities separate	**Model 3:** Club, home and public activities index
	Coeff'/S.E.	Coeff'/S.E.	Coeff'/S.E.
Child, parents and household factors			
Parental occupation (NS-SEC)			
Ref: Routine/Manual			
Intermediate	0.819** (0.27)	0.730** (0.27)	0.737** (0.27)
Managerial	1.360** (0.28)	1.215** (0.28)	1.206** (0.28)
Not working	0.320 (0.32)	0.342 (0.32)	0.386 (0.32)
Mother's working hours	-0.005 (0.01)	-0.006 (0.01)	-0.006 (0.01)
Parental education (NVQ)			
Ref: No formal qualification			
GCSE or equivalent	-0.161 (0.47)	-0.198 (0.47)	-0.208 (0.47)
A-levels or equivalent	0.681 (0.38)	0.482 (0.38)	0.433 (0.39)
University degree or equivalent	1.273** (0.41)	0.895* (0.41)	0.934* (0.41)
Household's income			
Ref: Bottom quartile			

2nd quartile	0.573* (0.28)	0.502 (0.28)	0.457 (0.28)
3rd quartile	0.914** (0.32)	0.763* (0.32)	0.721* (0.32)
Top quartile	1.506** (0.35)	1.295** (0.35)	1.269** (0.36)
Gender			
Ref: Girl			
Boy	0.368* (0.17)	0.403* (0.18)	0.271 (0.17)
Family characteristics			
Parenting composition			
Ref: Co-parent household			
Single-mother household	0.169 (0.25)	0.018 (0.25)	0.032 (0.25)
Adults in household			
Ref: No			
Yes	-0.015 (0.34)	0.005 (0.34)	0.033 (0.34)
Children in household			
Ref: One child			
Two children	0.380 (0.27)	0.366 (0.27)	0.368 (0.27)
Three or more children	0.494 (0.29)	0.514 (0.29)	0.545 (0.29)
School fee applied?			
Ref: No			
Yes	1.314** (0.50)	1.210* (0.50)	1.218* (0.50)
Absenteeism			
Ref: Never			
Rarely	-0.016 (0.20)	-0.063 (0.20)	-0.046 (0.20)
Frequently	-0.753** (0.22)	-0.829** (0.22)	-0.788** (0.22)
Child's non-verbal test score at age 5	0.571** (0.01)	0.568** (0.01)	0.568** (0.01)
Attendance at out-of-school clubs			
Ref: Never			
After school clubs - sweep 3	0.277 (0.39)	0.290 (0.39)	0.198 (0.39)
After school clubs - sweep 4	-0.467 (0.24)	-0.472* (0.24)	-0.481* (0.24)
After school clubs - both sweeps	0.142 (0.36)	0.101 (0.36)	0.104 (0.36)
Sport clubs - sweep 3	0.438 (0.35)	0.329 (0.35)	0.231 (0.35)
Sport clubs - sweep 4	-0.035 (0.25)	-0.086 (0.26)	-0.189 (0.26)
Sport clubs - both sweeps	0.593* (0.25)	0.463 (0.26)	0.271 (0.25)
Enrichment clubs - sweep 4	0.696** (0.18)	0.562** (0.18)	0.605** (0.18)
Engagement in home-centred activities			
Ref: Low			
Shared reading - moderate	0.553 (0.39)	0.468 (0.39)	0.486 (0.39)
Shared reading - high	-0.123 (0.40)	-0.263 (0.40)	-0.249 (0.40)
Shared creative activities - moderate	0.744** (0.29)	0.683* (0.29)	0.674* (0.29)
Shared creative activities - high	0.979** (0.32)	0.920** (0.31)	0.903** (0.31)
Shared indoor games - moderate	-0.015 (0.26)	0.009 (0.26)	0.035 (0.26)
Shared indoor games - high	-0.252 (0.34)	-0.155 (0.34)	-0.106 (0.34)
Media usage - moderate	0.394 (0.61)	0.438 (0.61)	0.446 (0.61)
Media usage - high	0.139 (0.63)	0.233 (0.63)	0.251 (0.63)
Participation in commercial-public activities			
Ref: Never			
Visits to art venues - sweep 3		0.182 (0.36)	
Visits to art venues - sweep 4		0.544* (0.24)	
Visits to art venues - both sweeps		1.401** (0.24)	
Visits to the cinema - sweep 3		0.600 (0.42)	
Visits to the cinema - sweep 4		0.846** (0.32)	
Visits to the cinema - both sweeps		0.902** (0.28)	
Visits to sport events - sweep 3		-0.140 (0.35)	
Visits to to sport events - sweep 4		-0.474* (0.24)	
Visits to to sport events - both sweeps		-0.432 (0.31)	
Visits to theme parks - sweep 3		-0.778* (0.31)	
Visits to theme parks - sweep 4		-0.626* (0.30)	
Visits to theme parks - both sweeps		-0.276 (0.25)	
Commercial-public activities index			0.286** (0.05)
Constant	19.85** (1.01)	19.75** (1.03)	19.11** (1.02)
Diagnostics			
Student Level Variance	76.47 (1.04)	75.98 (1.03)	76.26 (1.03)
Snijders/Bosker R^2 Student Level	0.533	0.537	0.538
Ward Level variance	2.60 (0.40)	2.58 (0.40)	2.54 (0.40)
Snijders/Bosker R^2 Ward Level	0.329	0.333	0.331
-2LL	39933.64	39890.63	39916.89
-2LL Reduction		43.01	16.75

Home-centred activities

Table 6E: Models assessing the effect of a set of separate home-centred activities vs. an index of home-centred activities, on the verbal outcome (N=11,017)

	Model 1: Public & Club activities	**Model 2:** Public, Club & home activities separate	**Model 3:** Public & Club activities plus "home" index
Child, parents and household factors	Coeff'/S.E.	Coeff'/S.E.	Coeff'/S.E.
Parental occupation (NS-SEC)			
Ref: Routine/Manual			
Intermediate	0.808** (0.27)	0.791** (0.27)	0.790** (0.27)
Managerial	1.343** (0.28)	1.321** (0.27)	1.344** (0.27)
Not working	0.119 (0.31)	0.132 (0.31)	0.035 (0.31)
Mother's working hours	-0.012 (0.01)	-0.012 (0.01)	-0.013* (0.01)
Parental education (NVQ)			
Ref: No formal qualification			
GCSE or equivalent	0.818 (0.46)	0.816 (0.46)	0.902* (0.46)
A-levels or equivalent	1.459** (0.38)	1.463** (0.38)	1.620** (0.38)
University degree or equivalent	2.542**(0.41)	2.588** (0.41)	2.765** (0.41)
Household's income			
Ref: Bottom quartile			
2nd quartile	0.607* (0.27)	0.539* (0.27)	0.531 (0.27)
3rd quartile	1.147** (0.31)	1.044** (0.31)	1.066** (0.31)
Top quartile	1.695** (0.35)	1.594** (0.35)	1.607** (0.35)
Gender			
Ref: Girl			
Boy	-1.399** (0.17)	-1.484** (0.17)	-1.409** (0.17)
Family characteristics			
Parenting composition			
Ref: Co-parent household			
Single-mother household	-0.243 (0.25)	-0.358 (0.25)	-0.556* (0.25)
Adults in household			
Ref: No			
Yes	0.323 (0.34)	0.326 (0.34)	0.284 (0.34)
Children in household			
Ref: One child			
Two children	0.230 (0.27)	0.104 (0.27)	0.103 (0.27)
Three or more children	-0.092 (0.28)	-0.297 (0.29)	-0.319 (0.29)
School type and educational measures			
School fee applied?			
Ref: No			
Yes	2.603** (0.49)	2.530** (0.49)	2.591** (0.49)
Absenteeism			
Ref: Never			
Rarely	-0.901** (0.20)	-0.932** (0.20)	-0.912** (0.20)
Frequently	-2.391** (0.22)	-2.385** (0.22)	-2.393** (0.22)
Child's verbal test score at age 5	0.258** (0.01)	0.259** (0.01)	0.261** (0.01)
Attendance at out-of-school clubs			
Ref: Never			
After school clubs - sweep 3	0.128 (0.39)	0.051 (0.39)	0.108 (0.39)
After school clubs - sweep 4	-0.172 (0.24)	-0.189 (0.24)	-0.167 (0.24)
After school clubs - both sweeps	-0.962** (0.36)	-1.035** (0.36)	-1.040** (0.36)
Sport clubs - sweep 3	-0.455 (0.34)	-0.420 (0.34)	-0.346 (0.34)
Sport clubs - sweep 4	0.860** (0.25)	0.890** (0.25)	0.973** (0.25)
Sport clubs - both sweeps	0.691** (0.25)	0.684** (0.25)	0.791** (0.25)
Enrichment clubs - sweep 4	0.695** (0.18)	0.680** (0.18)	0.687** (0.18)
Participation in commercial-public activities			
Ref: Never			
Visits to art venues - sweep 3	0.719* (0.35)	0.709* (0.35)	0.727* (0.35)
Visits to art venues - sweep 4	0.751** (0.24)	0.795** (0.24)	0.821** (0.23)
Visits to art venues - both sweeps	1.064** (0.24)	1.156** (0.24)	1.218** (0.24)
Visits to the cinema - sweep 3	0.298 (0.41)	0.295 (0.41)	0.319 (0.41)
Visits to the cinema - sweep 4	0.461 (0.31)	0.480 (0.31)	0.540 (0.31)
Visits to the cinema - both sweeps	0.980** (0.28)	0.975** (0.28)	1.037** (0.28)
Visits to sport events - sweep 3	-0.766* (0.34)	-0.744* (0.34)	-0.646 (0.34)
Visits to sport events - sweep 4	0.062 (0.24)	0.090 (0.23)	0.171 (0.24)
Visits to sport events - both sweeps	0.450 (0.31)	0.482 (0.31)	0.638* (0.31)
Visits to theme parks - sweep 3	0.336 (0.30)	0.381 (0.30)	0.394 (0.30)
Visits to theme parks - sweep 4	0.101 (0.30)	0.164 (0.29)	0.160 (0.29)
Visits to theme parks - both sweeps	0.359 (0.25)	0.441 (0.25)	0.468 (0.25)
Engagement in home-centred activities			
Ref: Low			
Shared reading - moderate		0.231 (0.39)	
Shared reading - high		0.332 (0.40)	
Shared creative activities - moderate		-0.269 (0.28)	
Shared creative activities - high		-1.181** (0.31)	

Shared indoor games - moderate		0.614* (0.26)	
Shared indoor games - high		0.942** (0.33)	
Media usage - moderate		-0.516 (0.60)	
Media usage - high		-0.289 (0.62)	
Home-centred activities - index			-0.072** (0.01)
Constant	31.24** (0.72)	31.50** (1.03)	34.33** (0.83)
Diagnostics			
Student Level Variance	73.14 (1.00)	72.85 (0.99)	72.838
Ward Level variance	6.27 0.694)	6.11 (0.68)	6.027 (0.67)
-2LL	-39483.35	-39459.12	-39455.88
-2LL Reduction		**-24.23**	**-27.47**

Table 6F: Models assessing the effect of a set of separate home-centred activities vs. an index of home-centred activities, on the non-verbal outcome (N=11,097)

	Model 1: Public & Club activities	**Model 2:** Public, Club & home activities separate	**Model 3:** Public & Club activities plus "home" index
	Coeff/S.E.	Coeff/S.E.	Coeff/S.E.
Child, parents and household factors			
Parental occupation (NS-SEC)			
Ref: Routine/Manual			
Intermediate	0.733** (0.27)	0.730** (0.27)	0.730** (0.27)
Managerial	1.218** (0.28)	1.215** (0.28)	1.218** (0.28)
Not working	0.330 (0.32)	0.342 (0.32)	0.319 (0.32)
Mother's working hours	-0.005 (0.01)	-0.006 (0.01)	-0.005 (0.01)
Parental education (NVQ)			
Ref: No formal qualification			
GCSE or equivalent	-0.172 (0.47)	-0.198 (0.47)	-0.161 (0.47)
A-levels or equivalent	0.523 (0.38)	0.482 (0.38)	0.547 (0.38)
University degree or equivalent	0.910* (0.41)	0.895* (0.41)	0.942* (0.41)
Household's income			
Ref: Bottom quartile			
2nd quartile	0.479 (0.28)	0.502 (0.28)	0.469 (0.28)
3rd quartile	0.694* (0.32)	0.763* (0.32)	0.684* (0.32)
Top quartile	1.209** (0.35)	1.295** (0.35)	1.198** (0.35)
Gender			
Ref: Girl			
Boy	0.360* (0.17)	0.403* (0.18)	0.358* (0.17)
Family characteristics			
Parenting composition			
Ref: Co-parent household			
Single-mother household	-0.059 (0.25)	0.018 (0.25)	-0.101 (0.25)
Adults in household			
Ref: No			
Yes	0.015 (0.34)	0.005 (0.34)	0.008 (0.34)
Children in household			
Ref: One child			
Two children	0.369 (0.27)	0.366 (0.27)	0.352 (0.27)
Three or more children	0.493 (0.29)	0.514 (0.29)	0.461 (0.29)
School type and educational measures			
School fee applied?			
Ref: No			
Yes	1.129* (0.49)	1.210* (0.50)	1.126* (0.49)
Absenteeism			
Ref: Never			
Rarely	-0.057 (0.20)	-0.063 (0.20)	-0.059 (0.20)
Frequently	-0.808** (0.22)	-0.829** (0.22)	-0.809** (0.22)
Child's non-verbal test score at age 5	0.570** (0.01)	0.568** (0.01)	0.570** (0.01)
Attendance at out-of-school clubs			
Ref: Never			
After school clubs - sweep 3	0.280 (0.39)	0.290 (0.39)	0.278 (0.39)
After school clubs - sweep 4	-0.448 (0.24)	-0.472* (0.24)	-0.447 (0.24)
After school clubs - both sweeps	0.081 (0.36)	0.101 (0.36)	0.072 (0.36)
Sport clubs - sweep 3	0.343 (0.35)	0.329 (0.35)	0.360 (0.35)
Sport clubs - sweep 4	-0.087 (0.26)	-0.086 (0.26)	-0.071 (0.26)
Sport clubs - both sweeps	0.442 (0.25)	0.463 (0.26)	0.457 (0.26)
Enrichment clubs - sweep 4	0.526** (0.18)	0.562** (0.18)	0.524** (0.18)
Participation in commercial-public activities			
Ref: Never			
Visits to art venues - sweep 3	0.185 (0.36)	0.182 (0.36)	0.188 (0.36)
Visits to art venues - sweep 4	0.549* (0.24)	0.544* (0.24)	0.559* (0.24)
Visits to art venues - both sweeps	1.401** (0.24)	1.401** (0.24)	1.423** (0.24)
Visits to the cinema - sweep 3	0.624 (0.42)	0.600 (0.42)	0.627 (0.42)

Visits to the cinema - sweep 4	0.853** (0.32)	0.846** (0.32)	0.863** (0.32)
Visits to the cinema - both sweeps	0.918** (0.28)	0.902** (0.28)	0.927** (0.28)
Visits to sport events - sweep 3	-0.138 (0.35)	-0.140 (0.35)	-0.121 (0.35)
Visits to to sport events - sweep 4	-0.475* (0.24)	-0.474* (0.24)	-0.460 (0.24)
Visits to to sport events - both sweeps	-0.422 (0.31)	-0.432 (0.31)	-0.396 (0.31)
Visits to theme parks - sweep 3	-0.760* (0.31)	-0.778* (0.31)	-0.752* (0.31)
Visits to theme parks - sweep 4	-0.613* (0.30)	-0.626* (0.30)	-0.605*(0.30)
Visits to theme parks - both sweeps	-0.250 (0.25)	-0.276 (0.25)	-0.235 (0.25)
Engagement in home-centred activities			
Ref: Low			
Shared reading - moderate		0.468 (0.39)	
Shared reading - high		-0.263 (0.40)	
Shared creative activities - moderate		0.683* (0.29)	
Shared creative activities - high		0.920** (0.31)	
Shared indoor games - moderate		0.009 (0.26)	
Shared indoor games - high		-0.155 (0.34)	
Media usage - moderate		0.438 (0.61)	
Media usage - high		0.233 (0.63)	
Home-centred activities - index			-0.010 (0.01)
Constant	20.75** (0.72)	19.75** (1.03)	21.19** (0.85)
Diagnostics			
Student Level Variance	76.14 (1.03)	75.98 (1.03)	76.13 (1.03)
Ward Level variance	2.61 (0.40)	2.58 (0.40)	2.63 (0.40)
-2LL	39903.44	39890.63	39902.95
-2LL Reduction		12.81	0.49

Appendix 7: Interaction Effects

Table 7A: Verbal outcome by SES and attendance at after-school clubs

```
Log likelihood = -39452.14, Number of obs = 11,019
------------------------------------------------------------------------------
                Verbal Test |      Coef.   Std. Err.      z    P>|z|
----------------------------+-------------------------------------------------
                Intermediate Occ |   .7737991   .3083767     2.51   0.012
                Professional Occ |   1.278862   .3153345     4.06   0.000
                Not in Work      |   .4039841    .345357     1.17   0.242
                Mother's wrk hrs |  -.0127456   .0067828    -1.88   0.060
                GCSE or Equivale |    1.05272   .5063745     2.08   0.038
                A-Levels or Equi |   1.906085   .4144571     4.60   0.000
                University Degree|   3.284975   .4488825     7.32   0.000
                2nd Income Quarti|   .6867964    .311206     2.21   0.027
                3rd Income Quarti|   1.410407   .3560557     3.96   0.000
                Top Income Quarti|   1.611445   .3996036     4.03   0.000
                Gender - Boy     |  -1.379792    .166016    -8.31   0.000
                Single Parent HH |  -.5445203   .2494917    -2.18   0.029
                Other Adults HH  |    .284743   .3349759     0.85   0.395
                Two Siblings     |   .1066851   .2692911     0.40   0.692
                Three or More Sib|  -.3092354    .285173    -1.08   0.278
                School Fee - Yes |   2.582929   .4873646     5.30   0.000
                Absent Moderate  |  -.9003875   .1976665    -4.56   0.000
                Absent Frequent  |  -2.379972   .2170977   -10.96   0.000
                Age 5 Verbal Scor|   .2584415   .0086803    29.77   0.000
                After-school Sw3 |  -.1295625   2.427049    -0.05   0.957
                After-school Sw4 |   2.599668   1.141987     2.28   0.023
                After-school Both|   3.007515   1.572705     1.81   0.070
                PA Clubs Sweep3  |  -.3456497   .3426107    -1.01   0.313
                PA Clubs Sweep4  |   .9296282   .2523474     3.68   0.000
                PA Clubs Both Swe|   .7453307   .2537595     2.94   0.003
                Other Clubs Sw4  |   .6755225   .1801747     3.75   0.000
                Public Index     |   .3365927   .0492955     6.83   0.000
                Home Index       |  -.0737378   .0096901    -7.61   0.000
Parent Occupation x After-school C|
    Intermediate Occ x ACS Sweep3 |  -.8828663   1.342393    -0.66   0.511
    Intermediate Occ x ACS Sweep4 |   .6249919   .7363735     0.85   0.396
    Intermediate Occ x ACS Both Sw|  -.1460757   1.343662    -0.11   0.913
    Professional Occ x ACS Sweep3 |  -.7934638    1.29998    -0.61   0.542
    Professional Occ x ACS Sweep4 |   .6917652   .7446456     0.93   0.353
    Professional Occ x ACS Both Sw|  -.1336118   1.290226    -0.10   0.918
    Not in Work x ACS Sweep3      |  -2.550353   1.534347    -1.77   0.083
    Not in Work x ACS Sweep4      |  -.9898493    .809572    -1.22   0.221
    Not in Work x ACS Both Sweeps |   -1.97451   1.795064    -1.10   0.271
Parent Education x After-school Cl|
          GCSE x ACS Sweep3       |   5.549995   2.807903     1.98   0.048
          GCSE x ACS Sweep4       |  -1.821496   1.323644    -1.38   0.169
          GCSE x ACS Both Sweeps  |   -3.59771   3.137887    -1.15   0.252
          A-Levels x ASC Sweep3   |   1.344231   2.344037     0.57   0.566
          A-Levels x ASC Sweep4   |  -1.982802   1.073401    -1.85   0.065
          A-Levels x ASC Both Swee|  -3.272436   2.668253    -1.23   0.220
          Uni Degree x ASC Sweep3 |  -.2036039   2.415994    -0.08   0.933
          Uni Degree x ASC Sweep4 |  -2.800891   1.135861    -2.47   0.014
          Uni Degree x ASC Both Sw|   -3.40232   2.720019    -1.25   0.211
       Income x After-school Clubs|
          2nd Quartile x ASC Sw3  |   1.390007   1.365628     1.02   0.309
          2nd Quartile x ASC Sw4  |  -.8377768   .7399327    -1.13   0.258
          2nd Quartile x ASC Both |  -2.678235   1.528943    -1.75   0.080
          3rd Quartile x ASC Sw3  |   .3439902   1.475811     0.23   0.816
          3rd Quartile x ASC Sw4  |  -1.592874    .804797    -1.98   0.048
          3rd Quartile x ASC Both |  -3.197092   1.594451    -2.01   0.045
          Top Quartile x ASC Sw3  |   .7160545   1.525059     0.47   0.639
          Top Quartile x ASC Sw4  |   -.456863   .8696899    -0.53   0.599
          Top Quartile x ASC Both |  -1.032014   1.599104    -0.65   0.519
                        Constant |   33.83252   .8218445    41.17   0.000
------------------------------------------------------------------------------
  Random-effects Parameters  |   Estimate   Std. Err.      [95% Conf. Interval]
-----------------------------+------------------------------------------------
                 var(_cons) |   6.338835   .7001681      5.104914    7.871012
----------------------------+------------------------------------------------
              var(Residual) |    72.6148   .9927337      70.69491    74.58682
------------------------------------------------------------------------------
. testparm Parental_occupation x After_school_clubs, chi2(9)=10.22, Prob>chi2= 0.332
. testparm Parental_Education x After_school_clubs, chi2(9)=16.68, Prob>chi2=0.054
. testparm Income x After_school_clubs, chi2(9)=15.92, Prob>chi2=0.064
------------------------------------------------------------------------------
```

Table 7B: Verbal outcome by SES and attendance at PA clubs

Log likelihood = -39455.01, Number of obs = 11,019

Verbal Test	Coef.	Std. Err.	z	P>|z|
Intermediate Occupation	1.539342	.5141035	2.99	0.003
Professional Occupation	2.247121	.5753498	3.91	0.000
Not in Work	-.5497398	.4633241	-1.19	0.235
Mother's wrk hrs	-.0127379	.0067832	-1.88	0.060
GCSE or Equivalent	1.235828	.6169823	2.00	0.045
A-Levels or Equivalent	2.261748	.5102609	4.43	0.000
University Degree or E	2.865625	.6011076	4.77	0.000
2nd Income Quartile	-.6287982	.4331106	-1.45	0.147
3rd Income Quartile	.0233618	.566075	0.04	0.967
Top Income Quartile	.4600254	.7725824	0.60	0.552
Child is a Boy	-1.382947	.1661069	-8.33	0.000
Single Parent Househol	-.5412726	.2495069	-2.17	0.030
Other Adults in HH	.3144771	.3353806	0.94	0.348
Two Siblings in HH	.1143192	.2693306	0.42	0.671
Three or More Siblings	-.3147807	.2852555	-1.10	0.270
School Fee - Yes	2.553064	.4874939	5.24	0.000
Absent Moderate	-.9151688	.1977849	-4.63	0.000
Absent Frequent	-2.383864	.2174125	-10.96	0.000
Age 5 Verbal Score	.259523	.0086869	29.88	0.000
After-school clubs Sw3	.0590937	.3890889	0.15	0.879
After-school clubs Sw4	-.1617013	.2363041	-0.68	0.494
After-school clubs Bot	-1.036106	.3559037	-2.91	0.004
PA clubs Sweep3	**.7266342**	**1.364614**	**0.53**	**0.594**
PA clubs Sweep4	**.9618722**	**.9798925**	**0.98**	**0.326**
PA clubs Both Sweeps	**-.6928679**	**1.400088**	**-0.49**	**0.621**
Other Clubs sweep4	.6765965	.1803243	3.75	0.000
Public Leisure Index	.3396224	.0493144	6.89	0.000
Home Leisure Index	-.073788	.0096989	-7.61	0.000
Parental Occupation x PA Clubs				
Intermediate x PA Sweep3	-1.070164	1.021533	-1.05	0.295
Intermediate x PA Sweep4	-.6132566	.7344567	-0.83	0.404
Intermediate x PA Both Sw	**-1.201701**	**.6792913**	**-1.77**	**0.077**
Professional x PA Sweep3	-.7329165	1.083724	-0.68	0.499
Professional x PA Sweep4	-.8981925	.7825402	-1.15	0.251
Professional x PA Both Sw	**-1.392768**	**.7165987**	**-1.94**	**0.052**
Not in Work x PA Sweep3	-.0277883	1.064318	-0.03	0.979
Not in Work x PA Sweep4	1.211326	.7286854	1.66	0.096
Not in Work x PA Both Swe	**1.474823**	**.7504774**	**1.97**	**0.049**
Parental Education x PA Clubs				
GCSE x PA Sweep3	.598398	1.628323	0.37	0.713
GCSE x PA Sweep4	-1.308862	1.109319	-1.18	0.238
GCSE x PA Both Sweeps	-.032614	1.57081	-0.02	0.983
A-Levels x PA Sweep3	**-2.360655**	**1.244004**	**-1.90**	**0.058**
A-Levels x PA Sweep4	**-1.681198**	**.899807**	**-1.87**	**0.062**
A-Levels x PA Both Sweeps	.1372438	1.349258	0.10	0.919
Uni Degree x PA Sweep3	-1.205023	1.357474	-0.89	0.375
Uni Degree x PA Sweep4	-1.091563	.9915934	-1.10	0.271
Uni Degree x PA Both Swee	.8351782	1.394755	0.60	0.549
Income Quartile x PA Clubs				
2nd Quartile x PA Sweep3	1.420879	.9881754	1.44	0.150
2nd Quartile x PA Sweep4	**2.108555**	**.6787663**	**3.11**	**0.002**
2nd Quartile x PA Both Sw	**1.858839**	**.6921052**	**2.69**	**0.007**
3rd Quartile x PA Sweep3	1.136051	1.130933	1.00	0.315
3rd Quartile x PA Sweep4	**1.97756**	**.8048366**	**2.46**	**0.014**
3rd Quartile x PA Both Sw	**1.665893**	**.7816573**	**2.13**	**0.033**
Top Quartile x PA Sweep3	.6962678	1.355957	0.51	0.608
Top Quartile x PA Sweep4	1.556465	1.001376	1.55	0.120
Top Quartile x PA Both Sw	**2.0433**	**.9460806**	**2.16**	**0.031**
Constant	34.49404	.8814403	39.13	0.000

Random-effects Parameters	Estimate	Std. Err.	[95% Conf. Interval]	
sptn00: Identity				
var(_cons)	6.277024	.6951149	5.052334	7.798579
var(Residual)	72.66845	.9934508	70.74718	74.6419

. testparm Parental_Occupation x Sportsclubs* chi2(9)=16.58, Prob>chi2=0.055
. testparm Parental_Education x Sportsclubs* chi2(9)=11.43, Prob>chi2=0.247
. testparm Income x Sportsclubs* chi2(9)=16.30, Prob>chi2=0.056

Table 7C: Non-verbal outcome by SES and attendance at after-school clubs

```
Log likelihood = -39914.64, Number of obs = 11,099
------------------------------------------------------------------------------
                Non-verbal Test |      Coef.   Std. Err.      z    P>|z|
--------------------------------+---------------------------------------------
                Intermediate Occupat|   .5922184   .3133878     1.89   0.059
                Professional Occupat|     1.0661   .3200509     3.33   0.001
                Not in Work         |   .1934243   .3528274     0.55   0.584
                Mother's wrk hrs    |  -.0060554   .0068798    -0.88   0.379
                GCSE or Equivalent  |   .2198938   .5184933     0.42   0.671
                A-Levels or Equival |   .7809445   .4238033     1.84   0.065
                University Degree   |   1.183695   .4586911     2.58   0.010
                2nd Income Quartil|   .5245223   .3165929     1.66   0.098
                3rd Income Quartil|   .7242121   .3608606     2.01   0.045
                Top Income Quartil|   1.085681   .4039416     2.69   0.007
                Child is a Boy    |   .2122705   .1695079     1.25   0.210
                Single Parent Hous|  -.0966987   .2539738    -0.38   0.703
                Other Adults in HH|   .0388312   .3413447     0.11   0.909
                Two Siblings in HH|   .3347115   .2738289     1.22   0.222
                Three or More Sibl|   .4699335   .2893098     1.62   0.104
                School Fee - Yes  |   1.097413   .4955793     2.21   0.027
                Absent Moderate   |  -.0365858   .2014613    -0.18   0.856
                Absent Frequent   |   -.771563   .2204568    -3.50   0.000
           Age 5 Non-verbal Score|   .5693151   .0090407    62.97   0.000
           After-school clubs Sw3|  -1.972983    2.47637    -0.80   0.426
           After-school clubs Sw4|   1.624723    1.16274     1.40   0.162
           After-school clubs Bot|  -2.742904   2.810984    -0.98   0.329
           PA clubs Sweep3       |   .2689596   .3483804     0.77   0.440
           PA clubs Sweep4       |  -.1548387   .2564903    -0.60   0.546
           PA clubs Both Sweep   |   .2890596   .2569709     1.12   0.261
           Other Clubs Sweep4    |   .5745892   .1827352     3.14   0.002
           Public Leisure Index  |   .3025342   .0496432     6.09   0.000
           Home Leisure Index    |  -.0139709   .0098263    -1.42   0.155
Parent Occupation x After-school Club|
      Intermediate Occ x ACS Sweep3 |   1.778132    1.36491     1.30   0.193
      Intermediate Occ x ACS Sweep4 |   .6069091   .7490683     0.81   0.418
      Intermediate Occ x ACS Both Sw|  -.1103667   1.369946    -0.08   0.936
      Professional Occ x ACS Sweep3 |   .6708554   1.323726     0.51   0.612
      Professional Occ x ACS Sweep4 |   .5625784   .7550494     0.75   0.456
      Professional Occ x ACS Both Sw|   .6318575   1.323544     0.48   0.633
       Not in Work x ASC Sweep3   |   -.514496   1.556961    -0.33   0.741
       Not in Work x ASC Sweep4   |   1.036087   .8252302     1.26   0.209
       Not in Work x ASC Both Swee|   .5801956    1.80901     0.32   0.748
Parent Education  x After-school Club|
           GCSE x ACS Sweep3       |   1.625713    2.89297     0.56   0.574
           GCSE x ACS Sweep4       |  -2.812784   1.352275    -2.08   0.038
           GCSE x ACS Both Sweeps  |  -.4730985   3.116971    -0.15   0.879
           A-Levels x ACS Sweep3   |   1.572273   2.394681     0.66   0.511
           A-Levels x ACS Sweep4   |   -2.62156   1.094317    -2.40   0.017
           A-Levels x ACS Both Swee|   2.022013   2.622057     0.77   0.441
           Uni Degree x ASC Swee3|   1.175569   2.465801     0.48   0.634
           Uni Degree x ASC Swee4|  -2.106231   1.156376    -1.82   0.069
           Uni Degree x ASC Both |    2.15945   2.677101     0.81   0.420
Income Quartile  x  After-school Club|
         2nd Quartile x ASC Sweep3|   .4940039   1.385694     0.36   0.721
         2nd Quartile x ASC Sweep4|  -.7911172   .7550839    -1.05   0.295
         2nd Quartile x ASC Both S|   .0193612   1.553204     0.01   0.990
         3rd Quartile x ASC Sweep3|   .6444465   1.485095     0.43   0.664
         3rd Quartile x ASC Sweep4|  -.9194528   .8203605    -1.12   0.262
         3rd Quartile x ASC Both S|   .5133894   1.614457     0.32   0.750
         Top Quartile x ASC Sweep3|   .0282124   1.540406     0.02   0.985
         Top Quartile x ASC Sweep4|   .1687363   .8878815     0.19   0.849
         Top Quartile x ASC Both S|   .6177588   1.625001     0.38   0.704
                         Constant|   20.67039   .8406163    24.59   0.000
------------------------------------------------------------------------------
  Random-effects Parameters  |   Estimate   Std. Err.     [95% Conf. Interval]
-----------------------------+------------------------------------------------
sptn00: Identity             |
                  var( cons) |   2.584844   .4048749      1.901547    3.513675
-----------+-----------------+------------------------------------------------
             var(Residual) |   76.21849   1.037826      74.21129    78.27998
------------------------------------------------------------------------------
. testparm Parental_Occupation x After_school_clubs, chi2(9)=7.13,  Prob>chi2=0.623
. testparm Parental_Education x After_school_clubs, chi2(9)=17.13, Prob>chi2=0.046
. testparm Income x After_school_clubs, chi2(9)=10.54,  Prob>chi2=0.308
```

Table 7D: Verbal outcome by SES and visits to theme-parks/funfairs

```
Log likelihood = -39954.36,  Number of obs = 11145
------------------------------------------------------------------------------
                Verbal test |      Coef.   Std. Err.      z    P>|z|
----------------------------+-------------------------------------------------
                Intermediate Occupation     |   .8437916   .7039638     1.20   0.231
                Managerial/Prof' Occupation  |   2.321612   .7125197     3.26   0.001
                Parents are not in work      |  -.8034357   .6891412    -1.17   0.244
                Mother working hours         |  -.0167104   .0067378    -2.48   0.013
                GCSE or Equivalent           |   .4322758   .9573624     0.45   0.652
                A-Levels or Equivalent       |    1.04411   .8060894     1.30   0.195
                University degree or Equivale|   2.657436   .8887599     2.99   0.003
                2nd Income quartile          |  -.0855511   .6432541    -0.13   0.894
                3rd Income quartile          |  -.5738858   .7379162    -0.78   0.437
                Top Income quartile          |  -.2140061   .8290617    -0.26   0.796
                Child is a boy               |  -1.479901   .1692126    -8.75   0.000
                Single parent household      |  -.6883203   .2487966    -2.77   0.006
                Other adults in household    |   .2023432    .33439     0.61   0.545
                Two siblings                 |   .0909648   .2688266     0.34   0.735
                Three or more siblings       |  -.3339268   .2852113    -1.17   0.242
                School fee - yes             |   2.318007   .4848157     4.78   0.000
                Absent - moderate            |  -.8905352   .1974812    -4.51   0.000
                Absent frequent              |  -2.440975   .2167849   -11.26   0.000
                Age 5 verbal score           |   .2644638   .0086398    30.61   0.000
                Art venues - sweep 3         |   .7031268   .3518904     2.00   0.046
                Art venues - sweep 4         |   .8651541   .2344054     3.69   0.000
                Art venues - both sweeps     |   1.240937   .2362287     5.25   0.000
                Cinema - sweep 3             |   .2599736   .4110873     0.63   0.527
                Cinema - sweep 4             |   .5493891   .3114231     1.76   0.078
                Cinema - both sweeps         |   1.082269   .2761231     3.92   0.000
                Sport events - sweep 3       |  -.5875232   .3431523    -1.71   0.087
                Sport events - sweep 4       |   .2566763   .2342789     1.10   0.273
                Sport events - both sweeps   |    .719708   .3106921     2.32   0.021
                Theme-parks - sweep 3        |  -1.333982   1.249266    -1.07   0.286
                Theme-parks - sweep 4        |   .1126549   1.267834     0.09   0.929
                Theme-parks - both sweeps    |  -1.374211   1.059228    -1.30   0.195
                Social-group leisure index   |   .1072138   .0309466     3.46   0.001
                Home-centred leisure index   |  -.0722643   .0096385    -7.50   0.000
 Parental Occupation x  Visits theme-parks   |
          Intermediate Occ x theme-parks swee3|   -.288447   .9761381    -0.30   0.768
          Intermediate Occ x theme-parks swee4|  -.3416071   .9607914    -0.36   0.722
          Intermediate Occ x theme-parks both |    .032409   .7915229     0.04   0.967
          Managerial Occup x theme-parks swee3|  -.6391431   .9831325    -0.65   0.516
          Managerial Occup x theme-parks swee4|  -1.068217   .9788415    -1.09   0.275
          Managerial Occup x theme-parks both |  -1.344877   .7977254    -1.69   0.092
          Not in work x theme-parks sweep3    |   .9243581   .9630843     0.96   0.337
          Not in work x theme-parks sweep4    |   .1324405   .9628781     0.14   0.891
          Not in work x theme-parks both sweep|   1.752302   .9547666     1.84   0.066
 Parental Education x  Visits theme-parks    |
          GCSE or Equivalent x theme-parks sw3|   .2102946   1.443896     0.15   0.884
          GCSE or Equivalent x theme-parks sw4|  -.0033062   1.418154    -0.00   0.998
          GCSE or Equivalent x theme-parks bot|   1.021709   1.190108     0.86   0.391
          A-levels or Equiv' x theme-parks sw3|    .393195   1.169792     0.34   0.737
          A-levels or Equiv' x theme-parks sw4|  -.3011294   1.178772    -0.26   0.798
          A-levels or Equiv' x theme-parks bot|   1.375523   .9770812     1.41   0.159
          Uni degree or Eqi' x theme-parks sw3|   .2156717   1.263816     0.17   0.864
          Uni degree or Eqi' x theme-parks sw4|   -.839608   1.283342    -0.65   0.513
          Uni degree or Eqi' x theme-parks bot|   .8475387   1.059266     0.80   0.424
 Income x Visits theme-parks                  |
          2nd Income quar' x theme-parks sw3  |   1.472624    .908992     1.62   0.105
          2nd Income quar' x theme-parks sw4  |   .5244624   .8912715     0.59   0.556
          2nd Income quar' x theme-parks both|   .6408172   .7484328     0.86   0.392
          3rd Income quar' x theme-parks sw3  |   3.046351   1.027503     2.96   0.003
          3rd Income quar' x theme-parks sw4  |   2.170578   1.010625     2.15   0.032
          3rd Income quar' x theme-parks both|   1.650789   .8415093     1.96   0.050
          Top Income quar' x theme-parks sw3  |   2.026516   1.142064     1.77   0.076
          Top Income quar' x theme-parks sw4  |   1.473772   1.121085     1.31   0.189
          Top Income quar' x theme-parks both|   2.212174   .9309991     2.38   0.017
                                    Constant  |   35.55668   1.119407    31.76   0.000
------------------------------------------------------------------------------
  Random-effects Parameters  |   Estimate   Std. Err.     [95% Conf. Interval]
-----------------------------+------------------------------------------------
sptn00: Identity             |
                  var( cons) |   6.268981   .6954787      5.043882    7.791642
-----------------------------+------------------------------------------------
               var(Residual) |   73.32803   .9966897      71.40034    75.30776
------------------------------------------------------------------------------

. testparm Parental_Occupation*Vvisits_themepark, chi2(9)=11.55, Prob>chi2=0.239
. testparm Parental_Education*Visits_themepark,  chi2(9)=4.65,  Prob>chi2=0.863
. testparm Income_quartiles*Visits_themepark,   chi2(9)=16.41,  Prob>chi2=0.057
```